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Other outstanding writers in this February number Nigel Balchin . Brigid Brophy Sid Chaplin

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COVER: In every country there is at least one town or city of which a more mention raises a smile-its name to Embad with an expert takes. Like Marselller, or Aberdeen, The Societ Linion's equivalent is Odesse. and on the cover and pages 120-127 we publish new photographs of Odessa port by Oselli Cherman and Alexander Markelov. PHOTO CREDITS: Pages 8-13, Miroslav Marazov; 23-32, Alexander Gurvanov, Nikolai Akimor; 69-79, Irina Sitinc 94-105, Yellen Pekurovsky; 106-107, Vindiesir Kuchia.

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Art Director, Austoll Galkin, Technical Editor, Berta Bresler, Southeld is mublished by The Daily Mirror Newmanners Ltd. by agreement with National Press Agency.

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LETTERS TO THE EDITOR

Spires and spaceships Vyacheslav Zaitsev's article on Temples and Spoceships made excellent reading (Sentember 1968 issue). His previous one about an allied subject was equally fascinating (January 1967). In this connection I would like to mention that the word "vimana" in Sanskrit means both an airborne vehicle and a temple spire. Of course, mare research should be conducted

before any definite conclusions can be

2

reached.

Ranga Rea, Madrey, India

In the article on Temples and Spaceshire it is mentioned that the word "nave" meant craft or ship in all European languages, I would like to point out that in the Indian languages it also means something, having originated from the Sanskrit word "nou"

meaning ship. Honever, I do not agree with the viewpoint of the author, because it is not at all possible that there would be dunlicate higherical processes somewhere else in the universe leading to exactly similar biological characters evolving at practically the same time, and to one group of them visiting another in the distant past without leaving any material evidence or without our having any idea of their present schereabouts

The architectural designs are the natural outcomes of human habits.

Frank and realistic I should like to see SPUTNIK publish more about young people, about

R. R. Shak Rombay, India

I teach Russian at a school. Your magazine is a great help to me in preparing lessons.

their life in hostels and factories, about their holidays at camp, about their pastimes and their education. Please write, too, about the negative

aspects: for example, hooliganism and drunkenness, especially in the larger dition Ry the way. I do not geree with the

opinion of George Pish of Australia, whose letter was published in your August 1968 Issue, or with his judgment of the sculptures of Arto Chakmakchan. Funeniusz Koch, Warsow, Poland

Such articles as "Getting to Know the Octobus". "The Low and Common Balalalka", "Gauguins in a Russia" and "The Unmarried Mother: Human Problem. Russian Style", stood out in your July 1968 issue. It is especially important to have such human interest material as the last article, which opens up areas of life common to people everywhere and presents the Saulet answers in realistic, frank terms.

Holland Roberts, San Francisco, USA Bon spectit!

Reine a voune man looking after myself, I have tried some of your recipes and found them outte delicious. Trener Levelands, Lithron, Australia

I very much liked the article in the September 1968 SPUTNIK about the Odesta Opera Theatre and also the Armenian recipes. Zhelka Doncheva, Stara Zavora, Balvaria

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MRS BY MR.



LETTERS TO THE EDITOR

The article about schools and the unbringing of children was of especial interest to us (my wife is also a teacher) The article we found most interesting of all, was the one in the August 1968 issue, "Do We Love Our Children?" We have begun to bring up our daughters, aged two and four, according to the Nikitins' method. And we, of course, love our children very dearly

Monika and Dieter Weisshach Neabukor, German Democratic Republic SPUTNIK is my favourite magazine. Furthermore, it helps me with my Russian laneuage study.

Last year I visited the Soviet Union and went to Moscow, Kley and the Crimea. We liked your country tremen. dously, particularly Kiev. I am also very interested in Leningrad, I have heard that it is the most beautiful city in the USSR and that the Leningraders love it very much. This year I shall definitely take a trip there Dorote Filler, Warsew, Poland

Mare, please! I read easerly and with interest the material published in SPUTNIK about the work of Russian and Soviet writers. poets and artists. But I feel there is too little about architecture, and, after all. the architecture of Central Asia and the Far East is marvellous.

Another thing, I do not think you give enough emphasis to Soviet achievements in science, expecially in electronics and space research, fields in which there have been immense advances.

Andrzej Tysiac, Poznan, Poland Pen-friends wanted

I am interested in corresponding with people everywhere. My interests are music, travel, photography, water

sports, art and literature. My ove is 30 and I am a writer. I can read French, Spanish. Russian and some German. besides English Richard L. Bethen, 1208. B Sr. Mem's Count

Long Beach, California 90813, USA I want pen-friends from all over the

world. My hobbies are reading and writing stories to the local papers. Anando Piradasa, 47 Kottawa Road. Mirihana, Abperoda, Cerior

Looking for pen-friends from all over the world. My age is 30 and I am a last-year student of chemistry I also work in the Bulgarian Union of Sports. My hobbies are: stamps, books, viewcards and athletics. I know Russian, English, Bulgarian and some German. Maria Khicharana

15 Greben Planina Street, Sofia 21, Bulgaria I would like to enjoy the pleasure of your pen pals' club scheme. My age is 20 and I am an engineering student. I know English. Hindi and Gulrati.

Rai, 96 Ellesmere Street. Bolton, Lancoshire, England Being a voune lournalist. I am In-

terested in journalism and photography, I hope to have pen-friends interested in journalism, photography and astronomy from every part of the world. Correspondence could be only in English.

T. Indrallagare. 416 Navalar Road, Jaffns, Ceylon

I would like to have pen-friends in Korea, China, U.A.R. and all over the world. I am 17. My interests are classical music, theatre and stamps, I know English, Spanish and Portuguese

> C.P.113. Santa Anastacio-S.P., E.F.S., Bruzil

LETTERS TO THE EDITOR

I would like to correspond with friends from all over the world, either in French or in English. I am 24 years old. My interests are science and music.

Roser Karom, Zoak Michael, Josnie, Lebange Lam a schooleiri of 17. Lwould like to correspond with people from all over the world. I speak English and my hobbles

and interests are writing, travel, drama and all types of music. Tessa Corons, Fartey, Rasiya Road, Roudebasch, Cope Town, South Africa

I am a Polish student. My hobbies are music, liferature and philately. Can correspond in Russian, English. German

and Polish.

Adam Ratusinski. Wegarzewa, skr. poszt. 17, waj. Olsztyn, I am looking for pen-friends from dlf-

ferent countries. I am fond of books and hibing I know English Russian and Alina Gutkowska. 6 at. Kuthowshiczo, m.25, Warson, Poland

I would like to correspond with penfriends in English in all countries, I am 15 and my hobbies include music and poetry Barry Mercus, 126 Londhurst Was, Peckham Rve. Londan, S.E.15, England

I am a medical student of 19. I know Enolish, Russian and Bulgarian, Collectine stomes view-eards and records. I am fond of music, books and tourism.

Komen Tracker, Brd. 9 September 41.

Jon-Rock Doctiv block II. Entr. II. Sofia 12, Balparia 9 rue G. River. 59 Marco-Rornet, France. We very much regret that we are unable to publish the names and addresses of all the hundreds of people who write to us seeking pen-friends. Because of lack of space we now have to limit this service to SPUTNIK subscribers.- Editor.

and French

I would like to correspond with friends from any country around the world. I are a 26-year-old hatrdresser. My kobbles are: books, art, music, horses, hunting and handlerafts. I am a full-blood Sloux Indian. Speak English, Spanish, French and, of course, my native Sioux

Joek W. Smith (Faste Shield). 812 Columbus Street, Rapid City, Sauth Dakata, USA

I wont to have pen-friends all over the world. I know Portuguese and English. My hobbies include correspondence, music and outtar.

Rouse de Brasil. Rue de Caudeloria 6. Acede, Rio de Janeiro, Bratil I am 16 and would like to have penpals all over the world. Can correspond in Fnolish Italian and Russian.

Avandro Lopes Pleurate,

Katia V. Patrora, Latinka Street, Block 74, Entr. A., Safia 13, Bulgaria I am a student of Vivekananda college and a philatelist. I wish to have pen-

friends in connection with my hobbies: philately, swimming and photography. S. Raiovanet, 27 Fifth Main Road, R.A. Param, Madras 28, India

I would like to correspond with students from all over the world, but especially from the East European countries. I am 20 and I am fond of sports, music, books and films. I could correspond in Russian. Italian, English









Mister Sputnik

Drawing by Vadim Konopliansky

by Mikhail SENIN

from the magazine SOVIETSKY EKRAN (Soviet Screen)

People of 14 nationalities took part in the rescue of Umberto Nobile's expedition, stranded in the Arctic ice in the summer of 1928. by Enrico de Concini

Day and night, people all over the world sat listening for radio signals from the Arctic. One who picked up a message was Nikolai Schmidt, a 17-year-old self-taught radio ham living in a remote village near Archangel. He sent off a telegram to Moscow and the Soviet Government's commission for the rescue of the Nobile expedition despatched the ica-breaker Kravinto make a search

Nine members of the crew of the airshin Italia, which had met with disaster, remained alive. On an icefloe 60 sea miles from Spitzbergen, they awaited rescue in a gondola covered with red canvas-the colour instifications. of life and hope.

Tent" is directed by Mikhail Kalatoyou who made "The Cranes Are Flying" The scenario was written Their aim is not merely to repro-

duce historic events. They also investigate a problem which has lost none of its topicality: did Nobile have the right to make people risk their lives. even in the name of a lofty cause. that of demonstrating the power of human will and reason?

Nobile chose a wrong course for his dirigible. He allowed his people to leave their ice-floe, as a result of which Malmeren, the Swedish scientist, lost his life. Nobile himself got off in a plane when the opportunity arose. Yet for each of his actions there are a multitude of reasons and

It was not merely a question of the The Soviet Italian film " The Red conscience of an Italian explorer

1928 AIRSHIPDISASTER SCREENED

Soviet-Italian film of Nobile Expedition

The vital thing was that he chose a road in life along which sacrifices were inevitable-because it widened the bounds of human knowledge and aspirations and because be realised that there was a historical need to do

what he did The fascist commission set up to investigate the reasons for the disaster blamed Nobile for everything. On Mussolini's orders a smear campaign was unfolded, and its echoes can be heard to this day. In the film Nobile says in reply to his accusers, "I declare that if it happened all over again I would conduct myself as I did then, for my conscience is clear. I led people in a heroic feat, and I have nothing to reproach myself for."

He makes this statement to the court which examines all the circumstances in detail. It is not a State

court, but rather a symbolic court, a court of history, of conscience, of the audience. Members of the expedition speak before the judge, played by British actor Paul Scofield, and each one's story merces into a flashback

to the actual event.

The impression of reality is height ened by the use of a great deal of documentary material-contemporary photographs, maps, portraits of expedition members, shots from Italian, German and Soviet newsreels, This has had a great influence on the style chosen by the makers of the film, in particular on Leonid Kalashnikov, the cameraman. The style is a combination of the documentary and the romantic, of realism and emotion

There are many well-known actors in this film. Nobile himself is played by the British actor Peter Finch, and Lundberg, the Swedish flier who



Cleudia Cardinale, the Italian ster who plays the pert of a Swedish nurse in the Soviet-Italian film "The Red Tent".

found the party, by Hardy Kruger, a German. Georgian actor Otar Kohelidze takes the part of Ceceni, the mechanic, and Yuri Vishor, a popular Moscow singer, plays the scientist Begounek. Eduard Martsevich, a member of Moscow's Mayakovsky Theatre company, is seen in the role of Malmern, the meteorologist.

The party went to the Arctic to

Krasin and the rescue of members of the expedition by Soviet people. After shooting on the set at Mosfilm Studios in Moscow, the party went to Norway and Italy.

In Oslo they filmed the episode where Valeria, Malmgren's fiancee, who is a nurse, searches from King's Bay to Spitzhergen for the eminent explorer Amundsen, to ask him to help with the rescue. This is the only



The British actor Peter Finch on location. Peter takes the role of Nobile, the Italian explorer whose eirship crashed.

feminine role in the film, and, unlike the other characters, Valeria had no is still in robust prototype in real life. She is a symbol of those who remain at home white their men go off to distant parts.

The Hallo's take off or April 15.

The trailie's take off or April 15.

The Halia's take-off on April 15, 1928, was filmed in Milan. The film's artist, David Vinitsky, went to Rome to get the approval of Umberto No-himself for the sketches and drawings of the flying model of the

airship. Eighty-three-year-old Nohile is still in robust health, and recalls all the expedition's troubles in the utmost detail.

Nohile has been taking a great interest in work on the film, which does more than recreate the events of 40 years ago. It also provides an opportunity to make an un-

nd impassioned moral assessment of the them.



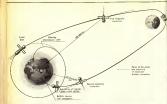


Claudia Cardinale with Mikhail Kalatozov, the director during a break in filming.



Mario Adorf appears as the expedition's Italian radio operator. Members of the Nobile expedition pay their last respects to the remains of their airship, which has crashed in the Arctic.





The flight of Zond-5 probe on the earth-moon-earth route



The probe's entry into the atmosphere and its descent to earth. 1, pre-set point of entry, 2, a point of entry into the atmosphere involving descent on the far edge of the landing area. 3, a point of entry involving descent on the near edge of the landing area.

HAPPY LANDINGS FOR MOON ORBITERS ADMITTALE ADM

With the recovery of Soviet space probe Zond-5 after its trip round the moon in September 1968, one of the most difficult problems of space flight was solved.

* * *

Advances in astronautics, following a number of Soviet and American lunar flight probes, made the search for a way to bring spacecraft safely back from inter-planetary flights a top priority job.

Recovery of a spacecraft after an inter-planetary trip is a much more complex business than returning an earth satellite, and one of the principal flight objectives of the Zond-5 experiment was the accurate re-entry of the probe at the second cosmic velocity and a soft landing in a de-

signated area

Zond-5, together with the last stage of the carrier rocket, was launched on its earth-moon-earth flight on September 15, 1968, in an orbit with an apoge of 219 km, a perigee of 187 km and an orbital inclination

of 51.5 degrees.
Sixty-seven minutes after the launching, at a command from the programming device, the engine of the last stage of the carrier rocket

was switched on to increase the speed to second cosmic velocity (11.2 km/sec.), the speed required to put a vehicle on to a lunar path. Before this engine was switched on, the probe and the last stage of the carrier rocket were positioned in space very precisely. When the engine unit finished flunctioning, the last stage of the carrier rocket was separated from the probe. ing normally.

Once the probe was on its path towards the moon, its trajectory was measured and found to be very close to the pre-set trajectory. Telemetered information also confirmed that all the systems and scientific equipment aboard the spacecraft were function-

After the trajectory data had been processed, corrections were made to ensure that the craft would go into moon orbit at a predetermined distance from the moon, and that the prohe would return to a designated area on earth. The ground control centre transmitted the information reowired for the flight adjustment, but hefore these corrections were made, corresponding orientation adjustments were carried out. The probe was given the angular velocity required to enable it to seek the sun by means of an optical sensor. Then it was swone around to seek the earth and train the appropriate sensor on

It has manocurves completed, 20nd; 5 chiled the moon. During this phase certain research work was carried out, measurements were taken and the equipment abourd the craft was checked. Then the spacetory, A further trajectory correction was made during the return flight, to ensure that the probe re-entred the earth's atmosphere at a predetermined angle. During all these operations are considered to the control of the control

Two vital conditions must be met before a spacecraft can return to earth and land in a designated area without heing affected by excessive gravitational force. Both the angle of re-entry and the point where re-entry occurs must precisely conform to predetermined data.

To ensure that hraking takes place in the required manner, the craft must be made to approach the earth at a very acute angle-almost tangentially-so that the flight trajectory crosses only the upper atmospheric layers while hraking takes place. Contact with the atmosphere causes the craft to lose almost all its entry speed of approximately 11 km/sec. within a relatively short period. Then, at an altitude of shout seven kilometres, when the velocity has dropped to something like 200 metres per second, a parachute system comes into operation to ensure a soft landing.

•

To land a spacecraft in a designated area, be perige mult be expected and the perige mult be expected and the perige mult be expected and the perige multition of the perige store and the harking force will be lower than it should he. If the prize is too low, excessive braking would cause the erraft to land short of the mark and of encounter other undestinated and the expectation of the perige store low. Lower I to miss the earth allogether, and an error of miss 10 for would expose it to excessive pravisationals. force and consequent overheating.

The optimum re-entry angles are five to six degrees to the local hori-

five to six degrees to the local horizon and the optimum perigee is 35 km. Under these conditions, the decent in hallistic trajectory will result in braking overloads of not more

than 16 units.

If the angle of entry is increased by one degree, the size of the overload increases to 30 or 40 units, which may destroy the spacecraft. On the other hand, if the angle of entry is reduced by one degree, the craft may miss the earth's six the earth such as the carbon six the earth six the earth six the carbon six the earth's force of attraction would ultimately hring it down.

It would have to describe them.

ellipses before the terrestrial pull would hring it through atmospheric layers sufficiently dense to slow it down enough for landing. Much time would be lost and the chance of an accurate landing

would he slim.

Thus, to land a spacecraft in a predetermined area it is imperative that its approach to the earth's atmosphere be made within very precise

limits.

The pre-set width of Zond-5's "entry corridor" was only 10-13 km, infinitesimally small compared with the 385,000 km the prohe had travelled to the moon.

* * *

The tremendous shock wave encountered by spacecraft passing through the dense atmospheric layers at second cosmic velocity causes the temperature to leap to 13,000°C.
Temperatures of only 7,000 to
8,000 degrees C are all that earthorbiting spacecraft have to contend
with when they re-enter the atmosubstract a first cosmic velocity.

sphere at trist cosmic velocity.

Effective protection against high
temperatures is therefore vital. It can
be provided by selecting an appropriate shape for the craft and providine a coat of insulating materials.

. . .

The shape of Zond-5, determined hy theoretical and experimental means, was a complicated scientific and technical task. The formula for the insulating envelope is very complex too; it includes various heat resistant and thermal insulating

* * *

materials

Precision and accuracy in all phases of the Zond-5 project were clearly demonstrated when, the required accodynamic hraking having been completed, the parachute system came into operation and the probe made a successful predetermined splash-down in its landing area in the Indian Ocean after a seven-day trip around the more a seven-day trip around the more a

APOGEE: Point in orbit farthest from earth. PERIGEE: Point in orbit nearest to earth.

One metre = about 39 inches. One kilometre = about 3,280 ft.

SPOTLIGHT 🔊

by Vladimir Pozner

AMERICA 1969-1972, CERTAIN PREDICTIONS IN CONNECTION WITH RICHARD NIXON'S BEING SWORN IN AS PRESIDENT OF THE UNITED STATES OF AMERICA

THE APPEARANCE of this issue of SPUTNIK will coincide with a major event: on January 20 Richard Milhous Nixon will take the oath that will make him the 37th President of the United States of America. This event-or, rather, its consequences-are a centre of general interest; the U.S. plays a vital role, the American President has immense power: clearly, the advent of a new Administration is a subject for general concern.

Many people, from the most naive dilettante to professional politicians, are trying to guess what may be expected from the United States in the years to come. I am no exception. But before making any

predictions, I would like to touch on the results of the 1968 presidential elections, since these results will, to a great extent, affect both the foreign and domestic policy of the Nixon Administration.

Minus 49 500 000

Six weeks before November 1968, a Harris survey furnished the floures for what might be called the phenomeooo of the frustrated voter. Thus, 57 per cent of those polled said they would prefer someone other than Nixon. Humphrey or Wallace as President; only 49 per cent felt that they were being offered a "fair choice" in candidates, and 46 ner cent professed themselves "disappointed" by the selection before them.

.....

water

Out of 121.5 million Americans old enough to vote, 74 million were expected to exercise their right. In reality even less voted-some 72 million.

As we know, Nixon received 43.5 per cent of the votes cast. But what about those who abstained from voting, those who found none of the candidates suitable? If one takes them into account-and not to do so would be wrong, for these are living active people who will certainly react to policies of the new Administration-it becomes evident that Nixon received about 26 per cent of the total possible vote.

Humphrey received some 25° ner cent. Wallace, 8 per cent. The majority of American journalists were unanimous in stating that, while many Americans were deeply distillusioned with Old Politics. they had no appetite for radical solutions-hence the choice of candidates at Miami Beach and Chicago reflected in a rough way the nonular mood. Some even said that Barry Goldwater had made his bid for the Presideocy four years too early because the American electorate had moved to the right.

I find it hard to agree with this. Goldwater lost to a man whose name was closely linked to the

Administration of John Kennedy, a man who became President as a result of the Dallas trazedy and who promised to follow the road of the New Frontier. The results of the 1964 elections gave an unequivocal answer as to what platform attracted the American voter more-a clearly reactionary one or, on the whole, a progressive one: the man who nicked up the Kennedy banner inflicted a resounding defeat on Gold-

The 1968 election was different in every respect. None of the three candidates was even remotely remindful of a man who would fulfil the Kennedy legacy.

Neither Nixon nor Wallsce had the slightest preteoce to that respect. Humphrey, too, could hardly be considered as that kind of possibility. When he said that "there may be a tendency to conservatism in the country right now. If you let the country move that way, it will," he was actually maintaining a position in line with Nixon.

Humphrey openly admitted: "I'm not a fighter; I'm a conciliator." And the electorate heartily concurred. "There are two sides to every question; Humphrey endorses both," read a placard in Chicago.

And yet, realising that Humphrey represented at least the possibility of a liberal trend, the voters allotted him only 0.5 per cent

......

leaver of their votes than Nixon.

But what about those 49.5 million

[4] per cent) who did not vote at all?

It is my belief, that if, instead of

Humphrey, there had been a candidate of the J.F.K. order, he would
have received a vast majority of

the votes cast for Humphrey plus a

great many that were not cast; at all.

Nixon, then, would have lost the

election.

Problems

The election is over. Only 26 per cent of all possible votes, or 43.5 per cent of those cast, have established Richard Nixon in the White House. This in itself represents the first problem the President must solve: how to go about policy-making without having the majority of the

American people behind him.
There is a second fact that creates
a no less serious problem. Both the
House and the Senate are controlled
by the Democratic Party. Nixon is
the first modern President-elect who
will have to contend with an
opposition-controlled Congress. How
will be go about policy-making in

this case?

In all probability, Nixon will have to form a cabinet that reflects not only Republican, hut also Humphrey-Democrat interests.

Realisins the popularity of Eugene

McCarthy among student youth and the Negro population, Nixoh will probably try to represent this interest—at least in token form. Lastly, the new President will try to win back the Deep South, lost by both the Republican and Democratic parties to George Wallace A piece of the nie may

well go to Dixieland.

The events that have occurred during the interregum periodfrom November 5 to the time of from November 5 to the time of the control of the control

tration".

Thus, the first thing we may expect from Nixon is the creation of a non-partisan Administration.

This done, how will the U.S. President go about solving problems of domestic and foreign policy?

Looking to '72

When I say that Mr. Nixon wants to be a two-term President, I doubt if this statement will cause heated arguments. Also doubtless, he understands that this is only wishful thinking without ending the war in Vietnam. This is Nixon's foreign policy goal number one, which, if not achieved, makes all his plans barren. When he said that Johnson and

When he said that Johnson and Rusk "could speak not Just for this Administration but for the nation, and that meant for the next Adminisration as well", Nixon was underlining his agreement with the Paris talks. If this means that Nixon's first foreign policy step will be ending the war in Vietnam, the more power to him.

At the same time, there is cause for anxiety for instance, a planned increase in Government defence spending—\$10,000,000,000 over a four-year period, notwithstanding an anticipated ending to the Vietnam war, which has been costing the U.S. \$30,000,000,000 annually. How will these additional allocations of the control of

weapons system. History knows cases when the vast responsibility of being Head of State brought out new features in a man, made him show a deep understanding of the vital issues of the day. Today's vital issue is peace, which can colly be guaranteed by general and complete disarramment. It would be graftlying to think that President Nixon will enhance this problem's soution by his petitical problem's soution by his petitical

"The quiet Americans, the silent Americans, who have not been the protesters, who have not been the shouters—their voices are welling up across the country today. The great majority of Americans are

.....

Just whom did Mr. Nixon have in mind when he spoke those words during the presidential campaign? Who are the "quiet Americans"?

What has made them "angry"?

They are the not poor, not coloured, not young population of
America, they are the rather wellto-do middle class who treasure
most of all their feeling of security. It
is to them that Nixon appealed.

Indeed, today the "quiet American" is angry, for he has lost his feeling of security. His word is being threatened by countless racial revolts and student demonstrations, by all kinds of "radicals" and "anti-American elements".

Knowing this, all three candidates made "law and order" the dominant theme of their campaigns. This was so evident that, as Joseph Alioto, Mayor of San Francisco, remarked, it seemed that "none of the candidates is running for President. They're all running for sherfil". Nixon, however, took up the law and-order issue before Humphrey.

problem's solution by his political There is really only one way to activities.

There is really only one way to put an end to demonstrations of

blacks, students and the poor; one must admit the social roots of their discontent something that in turn hard-core unemployed.

will engender important changes in American society as a whole. Nixon will hardly follow such a course. There remains another possibility, one that Nivon seems to advocate

"Doubling the conviction rate in this country would do far more to cure crime than quadrupling the funds for . . . the war on poverty." I believe the new President will do everything possible to restore to

the "quiet American" his Nirvana of security and tranquillity. He will attempt to reach his goal by strengthening "law and order"-or simply, by dealing with "shouters" and "protesters" more than strictly. It is quite possible that Nixon's

catering to the "quiet"-and welloff-American will define his domestic policy as a whole.

Social reform

During the Presidency of J.F.K., policy hinged on the conviction that the Government must spend vast sums of money to better the lot of Negroes, clean up the slums, improve health, education and transport. This money came from taxes taken from the higher-level income bracket.

Nixon will choose a different policy i.e. tax incentives to bestir

private enterprise to build ghetto factories and housing, to train the

Federal control over private enterprise is something Nixon will probably avoid. During his campaign be accused the Democratic Administration of imposing "heavy-handed, bureaucratic regulatory schemes" on the securities industry. These statements were welcome at Wall Street and resulted in what the brokers

called a "Nixon market".

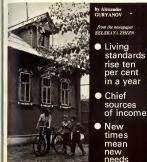
In other words, the Nixon Administration will probably be characterised by total freedom for private enterprise both at home and in foreign investments abroad which, at least to a certain extent, were subject to federal control.

There have been many statements

in the Western press to the effect that President Nixon is a pragmatic politician who will act according to the wishes and general feelings of those segments of the population that brought him into power.

Yet it must not be forgotten that the majority of Americans want a change in policy-they call for a deeper understanding of the social currents that have troubled the country for the past several years, and they are tired of the arms race and of Cold War doctrines.

A FARMER AND HIS FAMILY















drives a milk lorry.





It is not my intention to describe the life of collective farmers in general. I simply want to present a typical family, average in every way-number of children, income, needs and desires.

So I went to the Bolshevik Collective Farm, which lies in a part of the country I have known for years, in the Vladimir Region. 125 miles west of Moscow. At first I thought of Sergei

Gusey. But he is one of the collective farm's executives, and so must he ruled out Then how about the Ivanovs? But

Kondrati Ivanov's eight childrensix daughters and two sons-either have received a secondary or higher technical education or are still at

The chairman of a collective form must combine the talents of a statesman and the energy of a booster rocket. Akim Gorshkov. who heads the Bolshevik Collective Farm has both as witness the decorations on his lanel-the Red Flag of a Deputy to the Suprama Soviet of the USSR, and the Star indicating that he is a Hern of

Socialist Labour



college. Even though every citizen has access to advanced education. eight students in one household ermoves it from the "average"

category. The Arbuzovs members of the Bolshevik Collective Farm suited my requirements perfectly. The family consists of eight. Three are skilled workers-two machineoperators and a dairy maid. Average income. Average home, Average cultural level.

First, let's look at the house they live in-a wooden structure, plastered interior, wallnapered bedrooms, modern furniture, gas cooker, electrical appliances, etc. The head of the family, Alexander

Arbuzov, built the house himself When it became necessary to shift its site and make some additions to fit in with a general village architectural nattern. Arbuzov received a long-term credit from the collective farm. Many other neighbours have their houses built for them by the farm's carpenters, and pay for

them on a 10 to 20 years instal-The family's combined income is made up of payment in cash and in kind for their work on the farm. the produce of their private plot

ment plan.







and benefits from public consumption funds. Of the latter I'll say more

The three full-time working members of the family earned 2,804 roubles in cash last year, plus 356 roubles worth of collective

farm produce as payment in kind.

On their private plot (about one acre) they kept a cow and a couple of dozen chickens, and raised a calf and two pigs. Their private garden provided them with vegethem a gross 2,060 roubles—but a gross 2,060 roubles—but a gross 2,060 roubles—do the man and lorry driver must be deducted. Still, in kft a tidy net income. And Vladmirt, and onthly student grant.

The Arbuzov family, after a series of intricate calculations, came up with the figure of 4,936 roubles as their total annual income, without including benefits from public consumption funds.

Is this a high or a low income for

a family of this size? Arbuzov's father, Grigori, a "middle peasant" in the old days, thought his son's family had a high income. "Why", he said, "their receipts from their personal plot are greater than I ever carned when I had my own farm, plus the income I had from doine odd jobs on the side."

orng odd jobs on the side."

Reverting to the primitive terms

The man of the Arbuzov family unanimously vote for hunting as the finest form of recreation. peasants used in the old days to calculate income—"bread currency" —the present family income "could

—the present family income "could buy nearly 110,000 pounds ofbread."

Bread, of course, is still one of the staple foods in Rassis. But sing living standards create new demands for variety in diet. The Artucose eat well—up to 700 lbs of meat a year, 4,500 pints of milk and almost 2,500 eggs. They have to buy fish and tinned foods. Their food contains the required number of

calories, vitamins, proteins, carbohydrates.

The family spends about half its eash income on food, 2,370 roubles in all. Quite a lot, you think—but old Grigori used to spend up to 90 per cent of his earnings on food, and ate poorly at that.

Where does the remainder of

the income go? There is no rent to pay, but minor house repairs and improvements run to 150 roubles and another 160 roubles goes on gas, water, electricity and firewood. Small farm implements cost 110 roubles last year.

Clothes are expensive: 750 roubles is spent annually keeping the family wardrobes up to scratch. And wines and spirits, sweets and cigarettes add roughly another 375 roubles.

With a rise in educational stan-

dards comes a demand for books, magazines, newspapers, gramophone records, cinema tickets, sports equipment and other items. Last year expenses for cultural needs came to plout \$25 mobbles.

"But this is a welcome expense," says Alexander Arbuzov, "If our grandfather were slive and here he would say we were spending money on rubbish. The fact is that today we cannot live without all these things: they have become a necessity."

And does the family save any money? Yes, but they are not putting it aside for "a rainy day". They save with a definite purpose—to buy expensive items. That is how they acquired a TV set and a motor-cycle last year.

Income and expenses do not tell the whole story. The living standard of a family cannot be measured by wages alone. Like all Soviet families, the Arbuzovs receive many social services free or at a discount.

A society's humanism is tested first of all by the concern it shows for children, the aged and the disabled.

In old Russia children were looked after by parents, sick people by relatives, and old people (if they had no children) by nobody. The peasant had reason to fear everything and everybody—the local authorities, bad weather, fire but most of all illness and old age.

Things are different now. For over ten years the Boisbevik Collective Farm has been paying its members average carnings for sick leave and annual holidays, maternity leave, and examination leave in the case of part-time students. Old people get pensions.

Looking through pre-Revolutionary statistics, I noticed these causes of death among peasants: burned, drowned, kicked by a horse, crushed under a loaded eart, mauled

by a bear, bitten by a viper . . . Up to 30 per cent of the peasants died from unnatural causes.

unnatural causes.
"Most of these people would have lived if only medical aid bad been given them in time," said Timofei Biryukov, an old farmer, and added, "It was a terrible life we led in the

village!"
Three miles away from the farm there is a well-staffed district hospital with a wide range of specialists. Nevertheless, the collective farmers decided to set up a medical station of their own, from which patients could be sent on to the hospital if necessary, and where prescribed freatments could be given for minor

ailmente

For 20 years there has not been a single child's funeral on the farm; no-one has contracted malaria, tuberculosis or typhoid fever, to say nothing of smallpox and cholers, which were not infrequent in former

In one year the Arbuzov family used the services of the hospital, the crèche, the kindergarten and the sebool—at a cost to the State of 926 roubles.

This "secondary income", as the benefits from public consumptio funds are often called, was equivalen to 36 per cent of the family's total income. This is a substantial addition to the family's living

standards.

The family's living standards rose by more than ten per cent last year, and everyone confidently expects them to rise even faster in the

BULLFIGHT IN THE SNOW

by Yakov SEGEL

from the newspaper MOSKOVSKY KOMSOMOLETS

* * *

come. This is a substantial the author, a film director, ship director, and the family's living came across this story about the family's living standards.

The family's living standards a Spanish led and a Siberian bull

when he went to San Sebastian in 1966 for a film festival.

He had never been to a bullfight in his life. He had not the faintest idea what went on at one. All the same, people called him "Toreador", simply because he was a Snanjard

because he was a Spaniard.
"Toreador". . . Some even imagined it was his name. But he was really Juan Lopez.

Now he was living in Siberia, cast

there by the vagaries of fate and war. Times were difficult when he arrived there, and people hadn't the time or the energy to grapple with a strange foreign name. They started to call him Vanya, the diminutive of Ivan, After all, it turned out later that

Ivon and Juan were really the same name Dark men are reputed to like

blondes. Juan was just about 14, and he liked the dark-baired Olea.

Perhans because she was a little like a Spanish girl? Winter came, and cruel frosts. It was so cold that hirds froze in the

air and fell dead to the ground. The snow was so dazzling in the sunshine that it burt to look at it. People did not go out of doors any more than they could help. They had to go out to feed the cattle, of course,

and to get water, but they spent more and more time at home. One day, Baby, a huge pedigree bull, broke loose in the farmyard, Either someone had forzotten to fasten the door properly, or he had somehow managed to get it open him-

self-but whatever it was. Raby was out and was in a high old temper. As soon as he spotted a human being, he would lower his head, snort, and give an Impersonation of a steam

engine or even a tank No-one tried to get to grips with him-he was far too strong. And there were only women left in the village, and the old grandfathers. There were the children, of course

The bull could have been shot, and the old niebtwatchman even loaded his gun in readiness, but could not bring himself to shoot,

Baby was the only bull for miles around. People came from a long way off to "borrow" him, and then

returned him gratefully to his owners. been delighted at the way he side-

So the bull must not be killed. What could be done? Then someone remembered Ivan-They even remembered his real

name. Juan: they remembered that he was a Spaniard, and if that was the case, they reasoned, he would be able to deal with the bull with Juan was in a narrow space between the greatest of ease. It was nothing to a Spaniard; just a little routine

iob. Poor Inon had never even seen a builfight. He knew nothing about them. But no-one believed him, and out he went.

It was highly important to have people believe in you . . . Through the frost-patterned window Olgalooked out at him. Juan couldn't see her, but he knew very well that flattened against the fence. He had no she'd cleared a little peephole with her worm breath and was looking that toreader to behave

out through it Juan was not aware of the coldhe was too busy looking for the

bull. Baby was somewhere nearby and Juan wandered about in the snow between the quiet cottages. He had no weapons, not even a

plan of action. And not far away \$ bull was loose.

Suddenly they caught sight of each other. At rather close quarters The bull eazed smoulderingly a

tean for what must have been a whole minute before he began to

tower his head. Juan looked round desperately. but there was no-one in sight.

At that instant the bull gave a bellow and hurled himself forward. The youngster had never seen a toreador, but the fans would have

stepped. Baby raised his head, and was smazed. He had been sure that the boy would be on the end of his horns. He turned round to have another so. Now things were easier for Baby.

two fences. There was nowhere for him to hide, nowhere for him to run to, and the bull charged again. His tremendous bulk filled the entire passageway, and his broad, sweating flanks brushed against both

fences as he advanced inexorably upon Juan. By some miracle Juan dodged the blow again, squatting down indepartly to save himself from being

idea that it was not the way for a Juan felt something warm over his shoulder as the bull struck him lightly with a horn. But he was not frightened

any longer. He was just hot . . He ripped off his nadded jacket. which was wet with blood.

Now when the bull rushed at him again, the boy flourished the bloodstained jacket under Baby's nose, leading his enemy astray.

Juan did not know that he was doing just what an experienced toreador would do. He did not know that his bloody lacket was having nnecisely the same effect as the toreador's scarlet cape.

All he knew was that he had to get the better of that bull that there was no-one to do it for him, and that on

the other side of that window Olea was waiting. Now his first fear had passed and

he had cheated the bull three times, Juan even went out of his way to taunt the animal. He realised vacuely that the anytier he made this panting juggernaut, the greater the ad-

vantage to himself, to man, to Juan, to Vanya The bull surged forward again. This time Juan neither squatted nor jumped aside. He waved the jacket under the very nose of the infunated

Baby, and guided the bull past him. "It's his Spanish blood!" they whispered behind the windows. Only Olga could not understand what everyone else had grasped-

that she could colm down "Don't take on so," they said, "It'll all be all right. He's a Snaniard " *

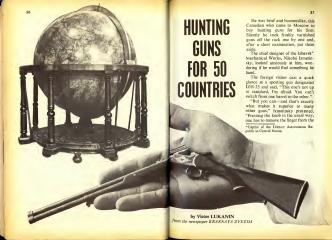
That was 24 years ago.

Juan has been back in his native Spain for a long time now, but every time he goes to a bullfight and things get particularly tense in the ring, he recalls that Siberian bullfight of his in the snow When he won such a

He still remembers Olea, although he does not talk about her The mother of his three children is called Mercedes' and that Siberian bullfight was a long, long time ago.

victory.

. '. . . But all the men were away at the war.



Modern Soviet hunting guns

"The very fact that this doublebarrel gun has one trigger instead of two makes aiming steadier and more accurate. It also has a ventilated forestock to prevent the air from heating and shimmering about the sights. And on top of all that, the rifle is very inexpensive."

The deal was closed and the Canadian signed a valuable contract for a large consignment of IZH-25 guns

I recalled that conversation again as I was walking through the Izhevsk Works among stacks of guns and chatting to its engineers. One of them was Anatoli Klimov, who back in 1954 designed the IZH-54 model —one that is still very popular with

bunters and sportsmen.

Anatoli Klimov showed me a wonderful display of the world's best guns. Holland-Holland, the famous

wonderful display of the world's best guns. Holland-Holland, the famous British double-barrel gun, looks beautiful and has very good performance. But it's very expensive, as it takes the gunsmith six months to





make. The Izhevsk Works manufacsures cheaper guns, putting them within reach of every sportsman. The

famous IZH-54, for example, costs anly 90 roubles (about 100 dollars or \$40 at the official rate of exchange). At a recent testing of some Soviet

and foreign double-barrel models, the 17.H-54 showed the highest density of shot-56 and 66, as compared with the 54 and 60 of the German Simson.

Anatoli Klimov also made some improvements to the earlier IZH-12 model by installing a fully automatic cartridge case ejector. When we went down to the shooting gallery on the ground floor he suggested that I fire a "blank" and open the barrels. The device worked perfectly-the cartridge case jumped out, pushed by the powerful spring inside the barrel. The gun is complete with a very

reliable safety mechanism which rules out accidental shooting. This gun is an elegant affair, giv-

ing the impression of being somewhat smaller than the standard gun of its type. The designers are sure it will soon catch the eye of guncollectors and sportsmen.

The Izhevsk gun-makers use the latest in technical facilities, so cutting production time and costs. But the traditional gun-making techniques have not been entirely forgotten. The personnel of the Izhevsk Works includes some old smiths for whom

Contrast in sizeauns from the Izhevsk works



an expense of waterthey're bound to have a good beg.

gun-making is an art, and who have no use for lathes and modern preci-

sion instruments.
One of them is Yevgeni Gubin, who uses an ordinary vice and fitters' tools. The masterpieces he makes are popularly known as "Stradivarius guns". It was Gubin who invented the one-trigger arrangement for the

double-barrel gun.

Another important innovation here is not furging. Inscead of boring, which is a very expensive and water full process, the barrel mould is beat-end with a high-frequency current and then stretched out to the required length. As a result, it takes half as much time to make a gun as before, and a little over one-fifth as much

In the assembly shop I was sbown a gun with a stock that I thought at first was made of walnut. To my surprise I learned that it was ordinary birch impregnated with aniline dye. Its effective range is about 90 yards, and its price a mere 20

roubles.

The Izhevsk Works also manufactures custom-made guns, with dimensions and shape to suit the convenience of the custom. These are often decorated with gold and

The Izhevsk gun-makers do a good job and can claim to be appreciated, for their guns have a market in 50 countries. One in every three guns made in Izhevsk goes for export.

Amazing Birds

brass chasing

Did you know that . . .

metal is used

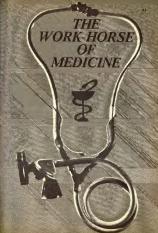
. . . Ostriches live to 45, wild geese to 80, parrots to 100, vultures to 115, and falcons to 160 years of age?

... There are about 100,000 million birds in the world? They are grouped into 9,000 species.
... Credit for the world's fastest metabolic rate goes to the tiny

. . . Credit for the world's fastest metabolic rate goes to the tiny humming-bird? Only the size of a butterfly, it never stops eating because it feels hungry every three or four minutes.

New Zealand's wingless bird, the kiwi, is one of the world's strangest? It never drinks water and it does not sing, even in spring. Its egg is a record-holder, weighing a quarter of the hen's bodyweight. Another eccentricity is that the egg is hatched by the male hird. One kiwi countel motologe a single ege in a vear.

. . . Some birds take a short cut through the Mont Blanc tunnel when migrating?



by Ivan ZYUZYUKIN condensed from the youth daily KOMSOMOLSKAYA PRAVDA

Prospect.

Dr. Alla Timofeyeva, head doctor of Polyolinic No. 32 serving the Zhdanov District of Leningrad, was the first person I head use the term week horse." to describe the doctor at the district polyolinic, And she should know—she had done years of work as a neighbourhoad doctor before being appointed to her present administrative ness.

A neighbourhood dector can be compared with the housing maintenance man: both keep the objects of their concern in good running order. Their jobs are not spectacular, but their work is a good deal more important for society as a whole than the recent sensational beart transplants, for instance.

The typical doctor

The neighbourhood doctor at the polyclinic is the one who usually nips illness in the bud, or at least sees that it is over as soon as possible. Nearly

two-thirds of Soviet doctors work in polyclinies or in "ambulatories", which are outpatients' clinics dealing with a particular illness or set of illnesses.

In setting out to find a "typical" doctor, I chose almost automatically the neat little four-storey box of a building at the corner of quiet Professor Popov Street and noisy Kirov

Probably a hundred times before, seeking treatment for one allment or another, I had gone through its glass door—full details of my medical history could be found in the card index there. Force of habit almost made me ask to see my neighbourhood doctor, but Dr. Timofeyeva said. "Choose any one of my

gorgeous girls! You can't go wrong."

There was more to the flippant remark than may be apparent—she knew I wanted a typical picture—and there is nothing more typical than the

fact that most Soviet doctors—74
per cent of them—are women.

Of the 73 sees of medicine

could choose from, I decided upon that of the therapist—the general physician—as covering the widest range. On top of the file of doctors law the record of Dr. S. I. Par-

khomenko, and that decided me.
Svetlana Parkhomenko, neighbourhoed dector, is a therapist, and distinctly a blonde. She is 30.

I am afraid I gave her a difficult day, carefully marking down the time every new patient opened the door of her consulting room, and accompanying her on home visits. Finally, at 5 p.m., it was time to collect first-former Andrei Parkhomenko from bis after-school group, where he does his homework and plays under the supervision of a teacher.

In Room 320

That day Dr. Parkhomenko received 25 patients in Room 320. Proverbially, Monday is a hard day for everyone, and for doctors, as I came to understand, it certainly is. Almost all of Dr. Parkhomenko's patients that day complained of a chill or heart trouble.

"it's all because of the humid weather and the sharp variations in atmospheric pressure," she explained to me. "When I hear this kind of weather forecast in the evening, I know that the next few days will bring a crop of 'llu cases and heart 'chronice'."

These two types behave differently. The 'flu cases can't conceal their annoyance at baying this trouble, and explain their symptoms vehemently, usually with statements like "This cough is killing me!" or "My head is splitting!"

"My head is splitting!"
Then Svetlana will ask, "Have you taken anything for it?" knowing that the patient has had some home does-

"Yes, I have," the patient will it answer, almost defiantly. "But what's the use?"

As she fills in the case history, the doctor asks dispassionately if the patient has ever bad tuberculosis or pneumonia. The patient's whole aspect seems to demand instant action, but the doctor just keeps on writing.

The "chronics" enter the room like old friends of the doctor, and they nearly all begin in the same way: "Last time, Svetlana Ivanovna, I told you . ." They are quiet,

reserved and crack rather sad jokes. Svetlana treats both categories with the same politeness and reserve, asking brief questions and then giving her advice. Some patients, especially the older ones, tell her their medical histories almost from childhood, as if afraid that some detail might escape the doctor's attention, Svetlana never interrupts them. She

just listens patiently, then says, "Strip to the waist."

Now, with ber stethoscope against the patient's chest, ber face seems to change—it is really the face of a doctor intent on her work. Whether the summer is warm or

cool, whether the winter is dry or slushy, the polyclinic every year records about 300,000 consultations and 50,000 home visits by doctors. Each general physician last year had on an average 5.2 patients an hour in the polyclinic, and 2.1 an hour on home visits. (All the patients live within a very small area.)

Seneca wrote, "We owe the doctor more than the payment we give him, for he expends on us not only his

for he expends on us not only his work but his heart."

What, in fact, are the charges that should be made for the work of

bringing people back to full health? Soviet doctors are Government employees with a guaranteed salary depending on their qualifications, specialisation and seniority. Free medical aid, within everyone's reach, is one of the principal social achievements of the socialist system.

This, however, also has its problems. As well as the usual free polyclinics, the Soviet Union also has some which make a charge of one to two-and-a-half roubles a visit, depending on the qualifications and academic standing of the practitioner.

But influenza sufferers, for example, do not go off to the fee-charging polyclinic. It is not so much a question of payment. Above all, it is because the patient is in the habit of attending his own polyclinic and his own doctor.

Not only that, but while the feecharging polyclinic can give treatment, it has no right to issue medical certificates. An ordinary polyclinic issues medical certificates to those who really need them, but of course there are always malingerers, so the

polyclinic doctor has to be careful.

In her early nost-graduate years

Svetlana felt compétely baffied by some of her patients. From time to time she would find a patient with healtby-looking eyes and rosy cheeks producing a critical temperature. After one or two lessons from malingerers, the budding doctor began to cheek the readines of her once trusty

thermometer with her own palm.

Naturally, such patients are rare and the great majority of people at the reception deak are normal people who simply want to keep as bealthy. The people who simply want to keep as bealthy. The people who simply want to keep as bealthy. The people was possible and stay alive longer. That they have a fair chance of succeeding is indicated by the poster hanging on the polyclinic wall, statistically the people was the people with the people was the people was the people was the people with the people was the people was the people was the people with the people was the people was the people was the people with the people was t

years."

And why not 100 years? That challenge seems to be written all over the faces of the still robust men and women who come to the poly-

Stages of life

clinic.

When Svetlana's last patient left I said to her, "You must be feeling tired?" She replied, "Yes, a little. But now I have my visits to do, so I's have a rest.

She said this without the least irony. On the way to her first patient she explained to me that she preferred these visits to the polyclinic consultations. "Somehow I feel more like a doctor when I see my patient lying in bed with medicines I have prescribed by his bedside." she said. Svetlana went straight to a polyclinic after graduating, but has never lost the hospital doctor's habit of sitting on the edge of the patient's bed.

"How are you feeling?" she asks.
"Better."

The doctor nods encouragement, if not actually gratitude.

"But I still feel shooting pains in my left side." the patient hastily

adds, as if fearing that the improvement has been exaggerated. "Last time you felt pains like that in your right side," she points out.

The doctor's remark brings a naive smile to the patient's face—just imagine, it was three whole days ago that the doctor visited him, but she remembers everythine!

"Svetlana Ivanovna, may I go out walking?" he asks.

"Yes, but only for half an hour at a time."
"Oh, you needn't worry, I won't be a minute longer."
The patient is trying hard to please

the doctor, but in a flat one floor down the dialogue takes an entirely different line. After listening to the patient, an elderly woman, Svetlana says, "You'll have to go to bospital." "Oh no," the patient retorts sharo-

ly. "I know why people like me are sent to hospital." Svetlana says, "But you're entirely alone bere, with no one to look

after you."

"Don't try to persuade me," the
patient says adamantly, eyes fixed on

the ceiling.

Her relatives had not called on her for a long time. No one is interested

in her health except the doctor, who has taken a professional oath to respond to another human being's distress. "All right," Svetlana says, thoughtfully fingering the medicine bottles on the bedside table. "I'll come to see you more often."

On our way to see another of her patients Svetlana was buttonholed by a woman.

"I've got all the signs of an ulcer, if not worse," she said. Svetlana suggested she should come round for an examination, and when we were on our own again, said to me, "Some patients like her have to be sent to

the psychiatrist."

The scene is constantly changing for the doctor, as she goes from a shared, crowded flat to a one-family flat. She sees dark staircase wells in old buildings and the sunlit landings of new blocks of flats.

Just as she has been observing all the signs of senile decay in a patient, a a little boy will come running in from the street, white with snow from head to foot and with checks as rosy as apples—proof of the eternal renewal of manking.

The doctor's visual memory remarks the appearance of new furniture in the home of a young family, just as her sense of smell catches the clusive perfume of lotions in the rooms of an old actres.

Such daily acquaintance with the "physiology" of everyday life makes the doctor a natural sociologist, statistician and demographer.

"Tomorrow I shall have a good day," she says thoughtfully. "I'll be doing my calls in the morning."

ASSETTATOR TRYADULUICO WHAT IS A POLYCLINIC?

UUVANKVAHAKY 12

It is a principle of Soviet life that medical attention should be readily available to all It is in fact, in two

censes First of all the services of doctors at the wide variety of medical institutions are within everybody's reach from the financial point of view, for they are free-only the medicine itself is naid for, and the charge is a

Second these services are within general reach in the geographical sense, for the pivotal point of the medical service, the key to all the other institutions, is the polyclinic, and there is at least one polyclinic in every district of a town, every urban district and every rural district cen

What does a Soviet citizen do when he feels he has a dose of 'flu coming on, is troubled with a nasty hout of lumbago, or perhaps fears he

may have some dread disease? Like his counterpart in a number of other countries he consults his local doc-

A big difference is that in the Soviet Union his local doctor, who is known as a therapist and specialises in the medical field, works from the local polyclinic instead of from a private surgery. So, depending on his condition, the patient usually rings the polyclinic and either asks that his doctor come round to visit him of makes an annointment to so and see the doctor himself. He can, of course, simply go to the polyclinic and take his turn in the queue if he prefers.

The polyclinic is a kind of outnatients' health centre at which a number of local physicians work, sharing the services of specialists in up to seven classes of illness and also such facilities as X-ray equipment laboratory services, physiotherany

and other treatment departments.

The number of local doctors denends on the size of the population served by the polyclinic. The area is divided into neighbourhoods, each having a maximum population of 4.000 and being served by at least seven neighbourhood physicians, who receive patients and visit them in their homes.

Among the specialists on hand at a polyclinic there are always a surgeon, a nerve specialist, an ear, nose and throat specialist, a gynaecologist, a dental surgeon who also deals with all kinds of ailments of the mouth, and a dermatologist.

Doctors at these State-run polyclinics may refer natients to one of the specialised clinics which exist all over the country, and can arrange for Apart from their healing work, the work, too, checking regularly on the health of the people in their district. Where necessary they issue medical certificates entitling nationts to naid sick-leave (full wages for those with more than eight years' working record, and a sliding scale for people

They also issue recommendations for sanatorium treatment-a sanatorium is a holiday home at which neonle can also have minor medical and toning-up treatment.

Many people nominally on the list of a local polyclinic do not in fact use it, as they may be attached to a clinic operating at their factory or

People living in rural districts also have the services of clinics staffed by midwives and feldshers-the latter have medical qualifications somewhere between those of a doctor and polyclinics carry out preventive a district nurse.

Drawing by Boris Ardos



"Try to rememberhave you eaten anything that disagreed with you?"

'HE'S HIPPN'

by Vladimir SAZANOV

Radio Moscow African Service Correspondent condensed from the weekly NEDELYA

I was sweltering in the torrid heat of an African town, north of the Founter and for from Moscow's snows, when my stroll brought me to an iron fence with the sign, "Zoo". Inside was a tree-shaded bench, It wouldn't be so hot in there and I

I never got around to baying a rest on that bench.

needed a rest

"Inst a minute" said a voice in

English from behind me. A boy of about 14, in a blue tacket with badge marked "Guide", asked, "Where are you from?" "From Moscow"

"Oh! Then let's speak Russian."

I soon found that my young friend knew only animals' names in Russian. As our conversation naturally veered towards zoology, I asked my new friend to show me round the

you. No-one, he said, would be able to do that as well as he could.

We stopped in front of a big cage. "A tiger!" exclaimed my guide. A tion it was "A snake!" It was a cobra, so I agreed with him.

The tour promised no great discoveries, and I was about to thank my guide and depart when he said suddenly, "Shhhh! See that lion?

You can feed him." "Through the bars of the cage?"

"No, you can go right into the cage." I was quick to decline, but from

my guide's expression I understood that I had really offended him "Perhans there's a horse around?" "No, but we've got a

hippopotamus," declared my guide, honefully looking into my eyes. "A hippo?"

good hippo." My companion grabbed an iron rod beside a nool and began beating lustily on a sheet of rusty iron. The water surged up and out came a

monstrosity of about two tons "There are some leaves and branches-throw them into his mouth," said my guide.

Hippo opened his mouth so wide that it seemed I could almost fit into it, standing between his upper and lower dentures. With trembling hand I threw a small bundle of twigs into the vawning cavern. Hippo clamped his laws and smacked his line with satisfaction.

The second beloing was bigger, Hippo ate with relish again, Becom ing bolder, I fed him one bunch after another. Both Hippo and I enjoyed it. I didn't even notice that my guide had disappeared.

I shoved the last great bunch of branches into Hippo's mouth. He suddenly grunted, blinked his eyes and began coughing. Something had stuck in his throat. I looked beloless. ly and with guilty conscience at the

Hippo kept coughing. He couldn't shut his mouth. I had to act.

suffering beast.

I holdly shoved my arm into his mouth to remove the branches that were caught. At this moment his iaws clamped shut. My arm was held

fast between his teeth. I know I let out some kind of cry and tried to null my arm out, but in vain. Hippo had other ideas. I began to talk to him, reminding

him that he was berbivorous and that "Sure. But don't be afraid; he's a I was a species of fauna rather than flora. Hippo listened attentively, but didn't let go of my arm. Some mischievous gleam seemed to light his bloodshot eyes. And then the beast began backing into the pool.

> "Mama!" I exclaimed, in a voice scarcely human. In place of my mother, the guide turned up. One glance at my agonised face and he shot to Hinno's rear, winding his tail like a propeller. All of a sudden Hippo's jaws loosened and out came my arm. He blinked mournfully and, head bowed, waddled into the water. I could not utter a word.

"What are you afraid of?" my guide asked, "All you have to do is wind his tail and he onens his mouth. No need to be afraid of him. He's a good Hinno,"





RUSSIANBALLET Traditions and Innovations









Theatre's chief hallet master at

Compiled from the books, Sixty Years in Ballet. by Fyodor Lopukhov, ballet master: New Trends in Soviet Ballet. by Boris Lyoy-Anokhin, hallet critic: and The Road of Ballet Master Lopukhov, by Yuri Slonimsky, ballet critic.

So far there have been two international competitions in Moscow, the International Film Festival and the Tchaikov sky Competition. Now a third is to be added to the list-the First International Ballet Concourse of Ballet Artists will be held in the Soviet capital from June 11 to 25 this year. Not only will young dancers from all over the world compete; prizes and diplomas will be awarded for the best of the latest work done by ballet masters, for the most interesting choreographic developments in contemporary ballet. This article concentrates on the Russian classical ballet: we plan to publish more articles from time to time on ballet in the Soviet Union.

and Vaslay Nijinsky, Russian choreography was winning world acclaim. nce is as much part of the At that period Marius Petins, who Questian's life as song is part of the

tralian's.

entity.

virtuoso technique of the Italians.

That was in the latter half of the

nineteenth century, when something

quite new the Russian ballet, pro-

foundly musical and profoundly emotional, emerged as a distinct

Many of the eminent Furonean

hallet masters and ballerinas who

came to Russia at that time staved for considerable periods, and in their

turn they absorbed and were influ-

enced by the purely Russian incre-

dients of ballet. Russian choreog-

raphers began to appear, and they

collaborated with foreign masters to

create the first Russian ballets, many

of which have become classics-

Tchaikovsky's "Swan Lake", "The Sleeping Beauty" and "Nutcrack-

laid the foundations for the Russian

school of choreography and opened

ballet schools in St. Petersburg and

Moscow which at the turn of the

century produced such scintillating

dancers as Anna Pavlova and Ye-

katerina Geltzer, Mikhail Mordkin

er", and Glazunov's "Raymonda".

had come from France years before. and Lev Ivanov were both leading When Italian and French ballet hallet masters at the Mariinsky Onemasters brought the dance sur les ra House in St. Petersburg. They not only cherished the traditions handed pointer to Russia, they found fertile soil. In time a brilliant compound down from earlier masters: they unresulted from the combination of the tiringly sought new ways and means elegant comewhat mannered classic of expression. cal dance of the French and the pure Towards the end of his life Peting

revised the old masterpieces, ridding them of cliches and creating genuine ly effective bellets without chunks of unrelated mime and pointless

Ley Ivanov who worked with Peting was responsible for the second act of "Swan Lake", which has still to be surpassed by any choreographer

At the Rolshoi Theatre in Moscow the chief choreographer was Alexander Gorsky. In a certain sense the Moscow company gave more marked expression to the purely Russian features than the St. Petersburg dancers. The reason was that in Moscow there was not the same alienation of theatre from public as in St. Petershurg, the royal seat, with its court and its aristocratic balleto-

The new Russian choreographers manes. It was at the Bolshoi that Yekaterina Geltzer's talent flowered. Her dancing was passionate, fiery and heroic, unlike that of Paylova, the ideal lyrical ballering, whose body "sang" as she danced.

With the development of ballet

there had been a change in the type of hallerina. The naïve, sprightly Dianas and Floras of the early nineteenth century were like the struary turny of the Empire period; they gave way to the mysterious, insubstantial styphs of the romantic ballet, while at the end of the nineteenth century piquancy and the wasp waist

were in demand.

Geltzer was none of these types,
hut was the embodiment of a special
kind of feminine art—triumphant.

In Moscow at that time, particularly in Gorsky's productions, greater prominence hegan to he given to male dancers than female, and more male dancers than female, and there was greater diversity of dancing personality among the men. There was nothing effeminate about their dancing, which was highly expressive.

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noble and stirring.

Even then, however, when the Russian hallet had already soared to the heights, there were, in addition to the superb productions, a vast number of rather feehle attempts at ballet with primitive plots and mediocre musical scores.

Ley Vyanov died and Marius Peti-

pa left the stage, and at the heginning of this century the work of the Imperial Ballet Company deteriorated considerably, eaten away by the canker of uninspired repetition of old and once-successful formulas.

Then Fokune stepped in. He was a dancer bimself, and was then at the beginning of his career as a ballet master. He was in fact an all-rounder, being also a graduate of a drame school and a painter and musician. He had the support of such brilliant soloists as Anna Pavlova, Tamara Kartsavina and Waslav Nijinsky, and conducted the struggle against stagnation first at the Mariinsky and then on his own.

Fokine fiercely attacked the old conceptions. He devised new forms of ballet, finging out everything that had been done to death by the rigid rules of classical hallet, and ruthlessby rejecting even the most universally acknowledged movements and pas if they were not in keeping with the

psychology of the character.

Most of his productions were separate dances or sbort ballets. He chose excellent music which had not been composed for the hallet—by Weber, Chopin, Schumann, Saint-Saens and Rimsky-Korsakov.

He hegan to prepare new hallets in co-operation with eminent composers of the day—Maurice Ravel, Richard Strauss, tgor Stravinsky, etc. He also worked in close contact with stage designers: his co-operation with Alexandre Benois resulted in the splendid Polovitsian Dances from Borodin's "Prince Igor".

Although Fokine was fundamentally an innovations did not include throwing out the romantic hallet, which he thoroughly appreciated. He even composed one in the romantic tradition, but in keeping with the new spirit. It was "Chopiniana", known in the West as "Les Sylbidises".

After the Revolution in October

1917, there was a vast increase in the number of people who wanted and were able to watch hallet.

Stormy dehates began to rage.
What should Soviet ballet be like?
How could it get its message across
to the public? What should he the
attitude to the opposing principles of

rradition and innovation?

Some people sincerely helieved that as there had been a revolution in the State and society, there had to he one in the arts, too. They demanded that the old repertoire he cast out like so much rubhish; to them "Giselle" and "The Sleeping Beauty" were antediluvian.

Others, equally sincere, considered that no changes at all were necessary. All that was needed was to cherish the old productions and stage new ones in their image.

Yet others, while acknowledging the artistic worth of the classical heritage, called for new, fundamentally different haltes that would nevertheless represent a development of the not draw a direct statistic properties of the control of the contr

Soviet ballet.

Between 1918 and 1926 two things were of the utmost importance for the future, making possible the staging of many outstanding Soviet hallers. One was the tremendous weed done to restore classical hallers as their original form and pruse them of later graftings that spoiled their purity of style. The other was the superb training carried on at the halter schools, which produced a halter schools, which produced as Maria Semyonova, who hrilliantly combined some of the gifts of Pavdovan del Geltzer, and Georgi Balanchia, the Tamous ballet master working in

At the end of the Twenties and beginning of the Thirties, several ballets of many acts were made from masterpieces of Russian and world literature.

Prominent among these was "The Ice Maiden", hased on Ihsen's "Peer Gynt" and Hans Andersen's fairy tales. Set to music hy Grieg, it was staged hy Fyodor Lopukhov.

Among the works that have become Soviet classics are "Laurencia" (based on Lope de Vegals "Fleurer Ovejuna"), for which the mysic was written by Alexander Klein and the work of the Market of the Mar

This was the height of the achievement of Soviet hallet in its first 30 years, and it combined all the hest

continued on Page 60



discoveries made by Petipa, Ivanov, Fokine and the Soviet chorcographers. There was a splendid unity of Sergei Prokofee's magnificent music, Pyotr Williams' sets, strikingly in the style and spirit of the Renais-

sance, and the splendid dances.
It was "Romeo and Juliet" that brought fame to Galina Ulanova, the finest lyrical ballerina of the Thirties, Forties and Fifties, as Juliet, and to that witness dramstic dancer.

Alexei Yermolayev, as Tybalt. The fact that so many balts were being made from literary works brought about a situation in which there was more concentration on striking sets and mime sequences than on chorcography. The dance itself was emasculated, as could be seen in a number of baltets of the

Efforts had to be made, above all, to reinstate the dance proper, while preserving the profoundness of content and the psychological treatment of character attained in ballets of the Twenties, Thirties and Forties. In this a certain not was played by a study.

of ballet productions abroad.

In the West, modern classical ballet developed under the direct influence of Russian choreography, and sometimes with the direct participation of choreographers and dancers trained in the Russian school. Over this peried some ballet companies in Western Europe and America did interesting work in developing symptomic ballet, his roudine gleements of produce ballet companies in didding hallet of pon-ballet mirror.

True, these experiments sometimes

assumed a formal, somewhat abstract character, and then Western ballet lost the emotional and psychological impact for which the Russian

ballet was renowned. The broadening of contacts between Soviet companies and those of Western countries in the Fifties gave a new impetus to choreographic experimentation. This had its effect both on the choreographers of Europe and America and on the Soviet ballet masters, whose productions of the production of the contract of the production of the pr

both on the choreographers of Europe and America and on the Soviet ballet masters, whose productions of the Fifties and Sixties have aroused great interest and lively discussion. Many of these are complete innovations as far as Russian ballet is

With the support of the theatrical art directors and veteran Russian choreographers, Yuri Grigorovich fair sin Leningrad, loco Belisky (in Leningrad), loco Belisky (in Leningrad), Yusaliyov (in Moscow), Vegeni Changa (in Verevan) and Marat Gaziyee (in Perrvan) and Marat Gaziyee (in Perruan) and Marat Gaziyee (in Perrvan) and Marat Gaziyee (in Perruan) and Marat Gaziyee

Several ballet masters of the older generation, in particular Leonid Lavrovsky at the Bolshoi and Vladimir Burmeister at the Moscow Stanislavsky and Nemirovich-Danchenko Musical Theatre, have done some of

ideas in the dance

*Featured in the article "Rhythm of Happiness" in Sputnik for May 1968 their best work during these years. In this period the gifts of Vladimir Vasilyev (confusingly for Western

Vasilyev (confusingly for Western readers, not the same as Vladiers, and Vasilyov, mentioned earlier) and Yuri Solovyov, winners of the Nijinsky Prize awarded to the world's best dancers by the Paris Academy of the Dance, have been discovered and developed in the productions of the vectoral and voune chorerographers.

The same goes for other dancers of the younge generation, such as Nina Timofeyeva, Natalia Bessmert, nova, frina Koplackova, Natalia Makarova, Maris Liepa, Mikhail Lavovaky and Yuri Asaulyak, now the flower of Russian bailet. The talents of two brilliam tablerinas of the "post-Ulanova" generation—Maya Pliset of the post-ulanova" generation—Maya Pliset of the post-ulanova generation and productions of Vakobson and discovering Moscow and Alia Stevenson and Chickey and Chicke

Ballets which can be considered innovatory have been created in recent years in a variety of genres, with a variety of themes and styles. In all the productions staged by

In all the productions staged by Belsky, and in many of the ballets of Kasakkina, Vasilyov, Yakobson and Vinogradov, a rightful place has been given to contemporary themes. The younger ballet masters have demonstrated unquestionably that these we not alien to ballet.

Modern themes are Igor Belsky's forte. After his "Shore of Hope", a romantic poem about a fisherman who regains the homeland from which he was wrested by the war, Belsky created his "Leningrad Symphony" to the work composed by Dmitri Shostakovich in 1942, in Leningrad—a city which, though beleaguered, bombed and starved, never capitulated.

There is a naturalness about There is a naturalness about Igor Belsky's ballets, which combine the familiar movements of real life with the beauty of strict classicism. He succeeds in avoicing both a stilled representation of our life—an unfortunate ballet convention—and that obtographic naturalism so

* * *

alien to ballet.

The experiments of some Soviet ballet masters were in the field of symphonic ballet, stemming from a firm belief in the ability of modern classical dancing to convey the poetry and content of symphonic music without literary assistance, without he aid of a library assistance.

Hence a rejection of the traditional costumes of the classical ballet, the tunic, the tutu and the coller.

Tbese tendencies were particularly clear in the work of such small ballet companies as that of Kasyan Golei-zowsky, a Moscow ballet master of great experience. He bas created interesting ballets without plets to instrumental music and symphonic miniatures by Cbopin, Liszt, Scriabin and Prokofiev. His dancers give frequent concerts at the Tchaikovsky

Hall in Moscow, and are consistently popular.

Oleg Vinogradov's modern ballets are also interesting. He began by

staging, at the Novosibirsk Opera



and Ballet Theatre, completely original versions of such old-established favourites as "Romeo and Juliet", to Prokofley's music

Then a few years ago he staged the ballet "Asel", to Vladimir Vlasov's music, at the Bolshe in Moscow. This is based on the poetic story "My Little Poplar in a Red Kerchief", about a contemporary young woman of the Soviet Central Asian Republic of Kirghizia; it is written with delicate psychological insight by the popular Kirghiz novellat, Chinghiz Attmatov.

It can be said that the effects of the latest experimenting were most clearly manifested in "Legend of Love", set to music by Aref Felikov of Azerbaijan, in the Caucasus, and with choreography by Yuri Grigorovich" at the Rolkhoi Theatre in

Moscow.

This ballet is based on an Oriental legend about Queen MekhmenéBanu, who sacrifices her beauty to save her younger sister Shirin. It also tells of the brave young Ferhad, who, beloved by the Queen, himself loves Shirin, but has to give up his love in the oame of duty.

Neither Grigorovich nor Simon Virsaladze, the stage designer, has been dazzeled by the templation to reproduce the colourful world of the Orient. Their concern has been rather to present meditations on the meaning of love and heroism, duty and power.

"For article oo Grigorovich's work on Khacbaturyao's ballet "Spartacus" see Spattoik, Sentember 1968. Grigorovich's work is always filled with vivid imagery. In this long and complex ballet he has firmly rejected mime as a means of explaining the actioo, and has relied on dance and dance alooe. Like Goleizovsky, be has boldly introduced elements of

aerobatics to corich classical ballet. Research works and dissertations have been written by the experts on Simon Virsalader's costume designs for ballets (locluding every one of those created by Yuri Grigorovich in Leningrad, Baku and Moscow). With him, the modern element in stage costume is by no means just a tribute to fashlon. His costumes create remarkable colour effects which held pic put over the choreographen's me-

Highly original experiments have been carried out by the Leningrad ballet master Leonid Yakobson, whose productions arouse particular discussion.

In contrast to some other Soviet ballet masters or George Balanchine in the USA, Yakobson does not believe that many themes awating ballet expression can be interpreted by purely classical means. He maintains that the choreographer must seek and develop new, unorthodox movements on the basis of the system of movement elaborated by the classical school.

In this, the ballet master follows the traditions of the old ballet theatre. In his time Marius Petipa followed the principles now advocated by Yakobson. The Fairy Carabos in "The Sleeping Beauty", the Evil Genius in "Swam Lake" and Coppelius in Delibes' "Coppelia" are depicted not by classical metbods, but by other types of movement. But in the old ballets this principle is used only for secondary roles, orgative or

comic characters.

Reliance on different types of movement has been more extensive in the Fokine ballets and some of the classical Soviet productions. It declared to the classical discovery for the contraction of the classical discovery for the contraction of the Thirties, Forties, and Fifties, created his Mercuito in "Romeo and Juliet", and so revealed new facets of his islent.

What for most of the ballet masters was a method of treating individual characters was the main creative principle for Yakobson. Only in "Solveig" (music by Boris Assfyev) and to some extent in "Shurale" (music by the Tartar composer Yarullin), does he make broad use of toe dancing, and pay some tribute to classical traditions.

Yakobson's principle enables him to create ballets in the most diverse styles—from the sculptured Greek "Spartacus" to the vivid poster type of production, "The Bed Bug", based on the satirical play of that name by the Soviet poet Mayakovsky.

Cited here are only a few of the representatives of the post-war generation of Soviet ballet masters. But in Moscow, Leningrad and many other cities there are opera houses featuring the work of other ballet masters

who differ among themselves as much as Belsky, Grigorovich and Yakobson. Io their searches for new methods they depend on the new generation of ballet artists, graduates of the choreographic schools of the Soviet Union.

Some tonion.

Some three decades back, ballerinas and male dancers were trained only in Moscow and Leningrad. Now there are fine ballet schools in many cities which were considered "ballet backwoods".

Several years ago a fine ballet school, with all the latest equipment, was built in Perm, in east European Russia. As a result, a number of graduates of this school who joined the company of the Perm Opera Theatre, directed by ballet master Maratt Gaziyev, have lately won high wards at intercational ballet conpetitions at Paris and Varna (Bulearin).

Interesting experiments are being carried out in the ballet studio of the Opera Theatre in Ulan-Ude, capital of the Buryat Autonomous Republic in East Siberia. It is directed by that fine classical ballerina, People's Artist of the USSR Larissa Sakhyanova, a Buryat berself, and one of the most talented graduates of the Leningrad Rallet School of the Erchin

The number of innovatory ballets in the Soviet Union is increasing year by year. Our ballet masters are continuing to create "visual music", basing themselves on the traditions of the old Russian and Soviet Ballet, carrying these traditions further, and carefully following the work of their collegeues at home and above.

MOSCOW'S

TRAFFIC PROBLEMS

from the magazine GORODSKOYE KHOZIAISTVO MOSKVY (Moscow Municipal Affairs)

Moscow, with a population of more than six million, does not yet face such a severe traffic crisis as New York, Paris or London. But with more and more cars and lorries appearing in the city streets every year, an acute traffic problem could develop in the not-too-distant future.

Traffic experts are working

hard to avoid, or at least to mitigate and postpone, such a situation. In addition to the conventional methods—widening of streets, one-way traffic, construction of underpasses and clover-leaf crossings—more farreaching proposals are being advanced.

Banning of street parking in the city centre, and the building of many-tiered underground garages beneath offices, cinemas and theatres, are being considered. Another sebeme which is technically feasible is the construction of underground throughways at a depth of 120-150 feet. Cars would enter from ring roads and could travel at 65 miles an hour.

In the harsh winter months there would be no snow and ice problem. Exhaust gases could be piped to thermal power stations, thus ensuring good ventilation for the tunnels and providing additional fuel for beating water and

producing electricity.

Some of these projects have advanced beyond the realm of theory and entered the blueprint stage. Others are receiving serious preliminary study.

In any case, action is imperative if Moscow is to avoid the traffic shambles already being experienced by New York and other major cities.



traine in depth against traine troub.

One of Mascow's many underpasses, at the junction of Tchaikovsky Street and Kalinin Prospect



IVAN TURGENEV

Life and love and nature. and above all, truththese were the keys

IVANTURGENEV THEGREAT RUSSIAN WRITER

Ivan Turgenev lived and worked in a remarkable period of world and Russian history (1818-83), the period that saw, among other things, the 1848 Revolution and the Paris Commune of 1871.

He was seven when the Decemhrists' (revolutionary nohlemen) uprising took place in Russia in 1825. There were unbeavals in the social and spiritual life of mankind generally, tremendous developments in Russia, complex problems for a writer to handle

Turgeney's childhood was spent on the wealthy family estate. As a young man he often quarrelled with his mother, defending the serfs against her imperious actions. He condemned the harharous practice of selling and huving people, and was overwhelmed with sympathy for the victims of landlord despotism.

The life of the people as Turgeney

saw it in those years was depicted in A Hunter's Sketches (1847), which made him famous.

Turgeney's works are a living chronicle of the Russian emancine. tion movement of the last century. In his early novels he revealed the strong and weak points of the intel lectuals amone the centry in the law 1830s and 1840s, people who played an important role in Russian life.

In his hest novel, Fathers and Sons, Turgeney succeeded in showing the struggle of reformist and revolutionary trends in Russial

historical development. Fathers and Sons presented a much broader picture of reality than

his other novels. The controversy between "fathers" and "sons" reflected the clash but ween two cultures, with one giving way to the other-the old style, that of the gentry, to the new democratic culture. Turgeney himself said that his book was directed against the

gentry; it showed the futility of their life and the superficial nature of their democratic enthusiasms "My grandfather ploughed the land," said Bazarov, the hero, proud

of his pleheian ancestry, Bazarov was not a liberal reformer satisfied with petty improvements in life. He demanded the destruction and replacement of the very foundations of contemporary society.

Like other great realist writers, it most of his works Turgeney recreat ed the central struggle of his time, the dramatic clash of the individual with unfavourable social conditions of development. This conflict, and the sad ending of many of Turgeney's works. reflected the trasic fate of the finest neople in the Russia of his day. Hence the sad lyricism that was typical of him.

Turgeney created splendid portraits of Russian women, following their spiritual development, revealing their firm character and loving bearts.

For Turgeney love was a nowerful creative force, and he was a great noet of love. His works are distinguished hy moral purity and deen, sincere feeling, Turgency also wrote poetically of

nature, and was a master at landscape description. Nature played an important part in his works. This followed both from Turgeney's love of nature and his natural philosophy "Man cannot be indifferent to nature, he is linked to her by a

thousand bonds, he is her son," the author wrote His word-paintings of landscapes fascinated his contemporaries. "Nature is a sphere in which he is such a master that one does not dare to touch the subject after him. Two or three strokes, and you can smell the

fragrance," Leo Tolstov wrote in admiration Turgeney was especially exacting with regard to style and the use of language

ail " he serote

He had an immense interest in all aspects of life, "Life, reality, its caprices, its accidents, its accustomed hahits, its passing heauty . . . I love it

He was an energetic man, fond of travelling, seeing things, observing,

He would set out for Paris on on to London, then back to Paris. Vienna, Berlin and finally to Russia And everywhere he met and talked with lots of people.

While in Paris in the 1870s Turgeney was close to the French realist writers Flaubert, Daudet, Zola and Goncourt. Turgeney and Flauhert commanded the greatest authority in the "circle of the five" Later, the circle took in the young Maupassant, who styled himself

Turgeney's disciple. Turgeney was probably the first Russian writer to gain world renown. His work had a major influence on the development of literary realism in Western Europe. Prosper Mérimée once said that West European literary circles looked on Turgeney as "one of the leaders of the realistic school", one in whose talent the outstanding feature was love of truth

Over Turgeney's grave the French writer J. E. Renan said, "Glory and honour to the great Slav race, whose appearance on the proscenium of history is the most striking phenomenon of our century, glory and honour to it for finding at so early a stage such an incomparable artist as its spokesman! Never have the mysteries of popular conscience . . . heen revealed with such convincing insight. While Turgeney felt and created as an independent personality, at

the same time he was with the people, he was chosen by the people." On the following pages we present one of the stories from Turgenev's A

Hunter's Sketches.

THE TRYST

72

by IVAN TURGENEY

I was sitting in a birch copse in autumn, about the middle of September. From early morning it had been drizzling, with intervals from time to time of warm sunshine: the weather was unsettled. The sky was at one time overcast with soft white clouds, at another it suddenly cleared in parts for an instant, and then behind the parting clouds could he seen a blue, bright and tender as a beautiful eye.

I sat looking about and listening The leaves faintly rustled over my head; from the sound of them alone one could tell what time of year it was. It was not the gay laughing tremor of the spring, nor the subdued whispering, the prolonged gossip of the summer, nor the chill and timid foltering of late autumn, but a scarce,

ly audible, drowsy chatter. A slight breeze was faintly humming in the treetops. Wet with the rain, the conse in its inmost recesses was for ever changing as the sun shone or hid hehind a cloud; at one moment it was all radiance, as though suddenly everything was smiling in it: the slender stems of the thinly-growing birch trees all at once took on the soft lustre of white silk. the tiny leaves lying on the earth were of a sudden flecked and flaring with nurnlish cold, and the eraceful stalks of the high, curly bracken, decked already in their autumn colour, the bue of an over-ripe grape, seemed interlacine in endless, tangling crisscross before one's eyes; then suddenly again everything around was faintly bluish; the glaring tints died instantaneously: the birch trees stood all white and lustreless, white as fresh-fallen snow before the cold rays

of the winter sun have caressed it: and slyly stealthily the finest rain began falling and whispering through the wood.

The leaves on the hirches were still almost all green, though perceptibly paler; only here and there stood one young leaf, all red or golden, and it was a sight to see it flame in the sunshine when the sunheams suddenly sent tangled flecks of light through the thick network of delicate twigs, freshly washed by the sparkling rain. Not one bird could be heard; all were in hiding and silent, except that at times there rung out the metallic. hell-like sound of the jeering tomtit.

Before halting in this hirch copse I had been through a wood of tail sependrees with my dog I confess I have no great liking for that tree, the aspen, with its pale-lilac trunk and the greyish-green metallic leaves which it flines as high as it can, and unfolds in a quiverine fan in the air: I do not care for the eternal shaking of its round, slovenly leaves, awkwardly hooked on to long stalks. It is only handsome on some summer evenings when, rising singly above low undergrowth, it faces the reddening heams of the setting sun, and shines and quivers, hathed from root to top in one unbroken vellow glow, or when, on a clear windy day, it is all ripoling, rustling, and whispering to the blue sky, and every leaf is, as it were, seized with a longing to break away, to fly off and soar into the distance

But, as a rule, I don't care for the tree, and so, not stopping to rest in the aspen wood. I made my way to the birch conse, curled up under a tree whose branches started low down near the ground, and were consequently capable of shielding me from the rain, and after admiring the surrounding view a little. I fell into that sweet untroubled sleen only

I cannot say how long I was asleen, but when I opened my eyes, all the depths of the wood were filled with sunlight, and in all directions across the ioyously rustling leaves

known to hunters

there were glimpses, one might say flashes, of intense blue sky: the clouds had vanished, driven away hy the blustering wind; the weather had changed to fair, and there was that feeling of peculiar dry freshness in the air which fills the heart with a sense of huovancy, and is almost always a sure sign of a still bright evening after a rainy day.

I was just about to get up and try my luck again when suddenly my eyes fell on a motionless human figure. I looked attentively; it was a young peasant girl. She was sitting twenty paces off, her head hent in thought, and her hands lying in her lan; one of them, half-onen, held a big nosegay of wild flowers, which softly stirred on her check petticoat with every breath. Her clean white smock, buttoned up at the throat and wrists, lay in short soft folds about her figure; two rows of big vellow heads fell from her neck to her ho-

som.

rather pale lips.

She was very pretty. Her thick, fair hair of a lovely, almost ashen han was parted into two carefully combed semi-circles under the narrow crimson head-band which was brought down almost on to her forehead, white as ivory; the rest of her face was faintly tanned that solden hue which is only taken by a delicate skin. I could not see her eyes-she did not raise them; but I saw her delicate high eyehrows, her long lashes; they were wet, and on one of her cheeks there shone in the sun the traces of quickly drying tears, reaching right down to her Her little head was very charming

nose did not spoil her.

I was especially taken with the expression of her face; it was so simple and gentle, so sad and so full of children wonder at its own sad-

She was obviously waiting for someone: something crackled faintly in the wood; she raised her head at once and looked round: in the transparent shade I caught a rapid glimpse of her eyes, large, clear and timorous like a fawn's For a few instants she listened, not moving her wideonen eyes from the snot whence the faint sound had come; she sighed, turned her head slowly, bent still lower, and began sorting her flowers. Her evelids turned red, her lips twitched faintly, and a fresh tear rolled from under her thick eve-lashes and stood brightly shining on her cheek.

stockardynam oms white pensed thus; the poor glif did not stir except for a despairing movement of her hands now and them—and she kept listening, listening. Again there was a crackling sound in the wood; she started. The sound did not cease, it grew more distinct, and came closer; at last one could hear quick resolute foctosteps. She drew herself up and seemed frightened, her linear gaze more distinct, and came choser; and seemed frightened, and the seemed frightened with expectation, more contains the content of the content

Through the tbicket quickly appeared the figure of a man. She gazed at it, suddenly flushed, gave a radiant, blissful smile, tried to rise, and sank back again at once, turned white and confused, and only raised her quivering, almost supplicating eyes to the man approaching when the latter stood still beside her.

the latter stood still beside her.

I looked at him with curiosity from my ambush. I confess he did not make an agreeable impression on me. He was, to judge by external signs, the pampered valet of some rich young gentleman. His attire betrayed pretensions to style and fashionable carelessness; he wore a shortish coat of a bronze colour.

doubtess from his master's warddoubtes stromed up to the neck a pink crawa with tilac ends, and a pink crawa with tilac ends, and a black velvet cap with a gold ribbon, palled forward right on to his eyebows. The round collar of his white shirt mertilessly propped up his ears and cut his cheeks, and his starched cuffs hid his whole hand to the red erooked fineers, adorned by sold and

silver rines with turanoise forcet-

me-nots His fresh, red, impudent-looking face belonged to the order of faces which as for as I have observed are almost always repulsive to men and unfortunately are very often attractive to women. He was obviously trying to give a scornful and bored expression to his course features: he incessantly screwed up his milky erey eyes-small enough at all times; he scowled, dropped the corners of his mouth, affected to yawn, and with careless, though not perfectly natural nonchalance, nushed back his modishly curled red sideburns, or pinched the vellow hairs sprouting on his thick upper lip-in fact, he gave himself insufferable airs.

He began his antics directly he

caught sight of the young peasant girl waiting for him; alowly, with a swaggering step, he went up to her, stood a moment shrugging his shoulders, suffed both hands in his coat pockets, and barely youchsafing the poor girl a cursory and indifferent glance, he dropped on to the arcound.

"Well," he began, still gazing away, swinging his leg and yawning, "have you been here long?"

The girl could not at once answer.
"Yes, a long while, Victor Alexandrich," she said at last in a voice hardly audible.

"Abl" (He took off his cap, majestically assed his hand over his hand over his kistiffly curled hair, which grew almost down to his eyebrows, and looking round him with dignity, carelessly covered his precious head again, "And I quite forgot all about it. Besides, it rained!" (He yawned again, "Lots to do; there's no looking after everything; and he's always scolling. We see fof (monrow."

"Tomorrow?" uttered the young girl. And she fastened her startled eyes upon him.

"Yes, tomorrow, Come, come.

come, please!" he added in a tone of vexation, seeing she was shaking all over and softly bending ber bead. "Please, Akulina, don't cry. You know I can't stand that." (And he wrinkled up his snub nose.) "Else III go away at once. . What sillness—snivelline!"

"There, I won't, I won't!" cried Akulina, hurriedly gulping down her tears with an effort. "You are starting tomorrow?" she added after a

brief silence. "When will God grant that we see each other again, Victor Alexandrich?"

"We shall see each other, we shall see each other. If not next year— —then later. The master wants to enter the service in Petersburg, I fancy," he went on, pronouncing his words with careless condescension through his nose; "and perhaps we

shall go abroad, too."
"You will forget me, Victor Alex-

andrich," said Akulina mournfully.
"No, why so? I won't forget you, only you be sensible, don't be a fool; obey your father. . . And I won't forget you—no-o." (And he placidly stretched and wawned asgain.)

"Don't forget me, Victor Alexandrich," she went on in a supplicating voice. "I think none could love you as I do. I have given you everything. You tell me to obey my father, Victor Alexandrich. But how can I obey my father?"

"Why not?" (He uttered these words, as it were, from his stomach, lying on his back with his hands behind his head.)
"But how can I. Victor Alexan-

drich?—You know yourself,"

She broke off. Victor played with
his steel watch-chain.

"You're not a fool, Akulina," he said at last, "so don't talk nonsense. I desire your good—do you understand me? To be sure, you're not a fool—not altogether a mere rustic, so to say; and your mother, too, wasn't always a peasant. Still you've no education—so you ought to do what you're told."

"But it's fearful."

"O-oh! That's nonsense, my dear: a queer thing to be afraid of! What have you got there?" he added, moving closer to her, "Flowers?"

"Yes." Akulina responded deicctedly, "That's some wild tansy I picked," she went on, brightening up a little, "It's good for calves, And this is hud-marigold-against the king's evil. Look, what a funny flower! I've never seen such a funny flower before. These are forget-menots, and that's mother-darling. And these I picked for you," she added, taking from under a vellow tansy a small hunch of hlue cornflowers, tied up with a thin blade of grass, "Do glass,

you like them?" Victor languidly held out his hand. took the flowers, carelessly sniffed at them, and began twirling them in his ing," she said innocently. fineers, looking unwards Akulina watched him. In her mournful eyes there was such tender devotion, adoring suhmission and love. She was afraid of him and did not dare to cry. and was savine good-bye to him and admiring him for the last time; while took away his eye-glass, without

he lay, lolling like a sultan, and with magnanimous patience and condescension out up with her adors. tion. I must own that I glared indienantly at his red face, on which,

under the affectation of scornful indifference, one could discern vanity soothed and satisfied. Akulina was so sweet at that

instant; her whole soul was confidingly and passionately laid hare before him, full of longing and caressing tenderness, while he . . . he dropped the cornflowers on the grass, pulled a round eve-glass set in a hrass rim out of the side pocket of his cost, and been sticking it in his eye; but however much he tried to hold it with his frowning evehrow. his pursed-up cheek and nose, the eve-elass kent tumbling out and fell.

ing into his hand. "What is it?" Akulina asked at last in wonder "An eve-glass," he answered with

"What for?" "Why, to see hetter,"

"Show me " Victor scowled, hut gave her the

"Don't hreak it: look out." "Never fear, I won't break it." (She put it to her eye.) "I see noth-"But you must shut your eye," he

retorted in the tones of a displeased teacher. (She shut the eve hefore which she held the class) "Not that one, not that one, you fool! The other!" cried Victor, and he

allowing her to correct her mistake Akulina flushed a little, gave a faint laugh, and turned away

"It's clear it's not for the liker of us," she said.

"I should think not, indeed?" The poor girl was silent and eave a deep sich

"Ah. Victor Alexandrich, what it will he like for me to he without you!" she said suddenly. Victor rubbed the class on the

lapel of his coat and put it back in his nocket.

"Yes. ves," he said at last, "at

first it will be hard for you certain. ly." (He natted her condescendingly on the shoulder: she softly took his hand from her shoulder and timidly kissed it.) "There, there, you're a good girl certainly," he went on, with a complacent smile, "But what's to be done? You can see for yourself! Me and the master could never stay on here; it will soon be winter now, and winter in the country-you know yourself-is simply discusting. It's quite another thing in Petershurg! There, there are such wonders that a silly girl like you could never imagine them in your dreams! Such horses. and streets, and society, and civilization-simply marvellous!" (Akulina listened with devouring attention, her lips slightly parted, like a child.) "But what's the use," he added, turning over on the ground, "of my telling you all this? Of course, you can't understand it!"

"Why, Victor Alexandrich! I understand: I understand everything." "My eye, what a girl it is!"

Akuling looked down "You used not to talk to me like that once, Victor Alexandrich," she said, not lifting her eyes, "Once? Once! . . . My goodness!"

he remarked, as though in indignation. They both were silent. "It's time I was going," said Vic-

tor, and he was already rising on his elbow

"Wait a little longer," Akulina besought him in a supplicating voice. "What for? Why, I've said good-

hve to you." "Wait a little," repeated Akulina.

Victor lay down again and began whistling. Akulina never took her eyes off him. I could see that she was gradually being overcome by emotion; her lips twitched, her pale cheeks faintly elowed.

"Victor Alexandrich," she hegan at last in a broken voice, "it's too had of you . . . it is too had of you, Victor Alexandrich, indeed it is!" "What's too had?" he asked.

frowning, and he slightly raised his "It's too had Victor Alexandrich You might at least say one kind word to me at partine; you might have

said one little word to me, a poor, luckless, forlorn . . . " "But what am I to say to you?" "I don't know: you know that best, Victor Alexandrich, Here you are going away, and not one little word . . . What have I done to

deserve this?" "You're such a queer creature! What can I do?"

"One word at least " "There, she keeps on at the same thing," he commented with an-

novance, and he got up. "Don't he angry, Victor Alexandrich," she added hurriedly, with

difficulty suppressing her tears. "I'm not angry, only you're silly . . . What do you want? You

know I can't marry you, can I? I can't, can I? What is it you want then, eh?" (He thrust his face forward as though expecting an answer. and spread his fingers out.)

"I want nothing . . . nothing," she answered falteringly, and she yentured to hold out her trembling hands to him, "but only a word of parting."

And her tears fell in a torrent.
"There, that means she's gone off into a crying fit," said Victor coolly,

pushing his cap down over his eyes.

"I want nothing," she went on, sobbing and covering her face with her hands. "But what is there before me in my family? What is there before me? What will happen to me? What will become of me, poor wretch? They will marry me to a harful ... poor, forsaken ... poor, forsaken ... poor.

"Sing away, sing away," muttered Victor in an undertone, fidgeting with impatience as he stood.

"And he might say one word, one word . . . He might say, 'Akulina . . .

Sudden heart breaking sobs threads of autum spilers' weak prevented her from finishing; the lay stopped. He list and heart: with her face in the grass and the bright but child smile of fit botherly, bitterly shower; Her whole body shook convulsively, her neck differ heaved of her neck differ heaved or Her long represend girlf broke out in a open the heavy and sharply cleaving the content at last. Weart rooted over her, with his wings; he turned has the content of the heavy and the present of the heavy and sharply cleaving the same at last. Weart rooted over her.

shoulders, turned away and strode off.
A few instants passed. She grow
calmer, raised her head, jumped upd,
solowed round and wrung her hands
she tried to run after him, but her
legs gave way under her—she fell on
her kness. I could not refrain from
trushing up to her; but, almost before
she had time to look at me, she made
a superhuman effort, got up with a
faint shriek and vamished behind the
life to the she had been a started on
the ground.

I stood a minute, picked up the are still in my keeping.

bunch of cornflowers, and went out of the wood into the open country. The sun had sunk low in the pale clear sky; its rays, too, seemed to

have grown pale and chill; they did not shine; they were diffused in an unbroken, watery light. It was within half-an-hour of sunset, but there was scarcely any of the glow of evening.

A gusty wind scurried to meet me, across the parched yellow stubble; little curled-up leaves, scudding hurriedly before it, flew by across the road, along the edge of the copse; the side of the copse facing the fields like a wall was all shaking and it up by tiny gleams, distinct, but not glong; on the reddish plants, the blades of grass, the straws on all sides, were parkling and stirring immercable-many distincts.

I stopped. I felt sad at heart; under the bright but chill smile of fading nature, the dismal dread of coming winter seemed to steal upon me High overbead flew a cautious raven. heavily and sharply cleaving the air with his wings; he turned his head, looked sideways at me, flanned his wings and, cawing abruptly, vanished behind the wood; a great flock of pigeons flew up playfully from a threshing-floor, and suddenly eddying in a column, scattered busily about the country. Sure sign of autumn! Someone came driving over the bare hillside, his empty cart rat-



There is a preconceived notion that a boxer needs only muscles, and that intellect is unnecessary in the squared circle. Personally, I believe that I am an

excellent refutation of this idea When I am in the ring my physical, spiritual and mental powers reach a neak.

During a recent bout I carried on an inspiring tête-a-tête with my onponent, who was from the Hercules amateur sports club.

As soon as the bell went be delivered a short left jab to my cheekbone and I felt as though I had stopped a fast goods traio. "How's your condition?" he in quired with solicitude, feinting in preparation for his next blow.

I understood immediately that I was dealing with an intellectual opponent who, like myself, enjoyed a chat in the lulls of combat

"That was nice work," I complimented him, ducking under his right book and politely inquiring if it was agreeable that I nummel his

hody. "My midriff is at your disposal," be said, smiling sweetly and delivering an uppercut to the iaw.

Something inside me churned like a butter-making machine and I was on the point of describing this in teresting phenomenon when the hell rang, signifying the end of the first round. "That was very pleasant," he said.

in a slightly tired voice, and wafted me a kiss as we retired to our respective corners

"He's wide open for a right hand." my coach hissed, while waving a towel over me. "Make use of that in the next round?"

The bell rang. "Your face is familiar. You re-

mind me of my grandfather," my opponent observed in reopening our conversation. He circled around me. "Especially your right profile. Your left reminds me of that actress who played the part of the grandmother A right hook hit grandfather and a

short left jab did for grandmother, I nerable spot and unconsciously "Your physiognomy is also known

to me," I gasped, hanging on the ropes. "But this conversation is becoming tiresome. Let's talk about literature "

We didn't get a chance, because the second round ended. "You are somewhat disturbed."

my trainer informed me, with a note of displeasure in his voice. "You are not taking advantage of that opening for your right. Remember!" I promised to remember.

"Have you read Updike?" I asked wheo we met io the centre of the ring for the third and final round. At the same time I swung a roundhouse

"Yes, I've read him," my op ponent said, picking himself up from the canvas, "but personally I prefer Salinger. Excuse me if I inconvenience you with a straight left. . . ," When my head cleared I fell into a

clinch. He had no objections, and we clung to each other like wet laundry hung out to dry. By the time the referee caught on to our stratagem and ordered us to "break", my worthy opponent had managed to recite

a short excerpt from Voznesensky's My right to the chin floored him. "For some reason I've just

Antiworlde

thought of Bernard Shaw," be continued, getting on his feet at the count of seven, "Remember his reply when they asked him, 'What can you put up with most easily?" " "Well, what did he reply?" I inquired impatiently, seeking his vul-

dropping my quard "He said . . . Eight! Nine! Ten! The last words were not uttered by

my adversary. Nor by G.B.S. They came from the lips of the referee. bending solicitously over me, just a moment before he raised my charming, sociable opponent's hand in victory.

It had been an extremely pleasant session, a battle of wits as well as muscle. I am unable to forgive myself only one thing: as I was being carried out of the ring, I forgot to ask.

"What did Bernard Shaw say be could put up with most easily?"



THE **OLD CRAFT** OF **LACE** MAKING by Galina OLGINA





We publish this article in response to a number of requests from readers.

The Lece-maker: peinting by Vessili Tropinin (1776-1857)

When and by whom the complex art of lace making was introduced to Russia will probably never be known—it has occupied a firm place among the handicrafts in this country from time immemorial.

Thirteenth-century chronicles record that Prince Daniil Romannvich impressed foreign ambassadors with his proud bearing and splendid garments. The princely stire, it appears, was trimmed with lace made from extremely fine silver and gold thread and embellished with a wide variety of sangles, festhers and pearls.

But the reputation of Russian lace was not due solely to such luxury items. Lace made firm liner thread became very popular, and it could be highly attractive—everything depeoded on the taste, skill and imagination of the lace maker.

The material was always available—the poorest home bad twn or three strips of land sown with flax. In the north the winters are lone.

ation to generatioo.

The connoisseur is also familiar

Lace-making schools bave no sith Vyatka lace, which also has its

The time falls noiselessly, binancesingen net up to Volopila. A teacher rivers, words and fields. Beneath largoring the special fallscown of hot covering the earth slumbers unitypils is Kaptolina Isakova, an daying. This is the season for handigly loce-maker who is a real artist, and the stress of the stress which busy with their lace line incorporate Lighth', a piece of the songs while busy with their lace line incorporate Lighth', a piece of the songs while busy with their lace line.

the rime-crusted branches outsidesed dazzling Northern Lights, the delicate tracery of a novelhake a Vologda lace won a gold medal at it melas . all these are transformed brussels Exhibition to 1968. Into fanciful patterns in the lace. Yestes lace is lighter and mmr To a Russian the words "Russiaficiate. The patterns are not so

10 a Russian the words "Russian delicate. The patterns are not so lace" evoke pictures of such old-sarply defined, and transitions are towns as Vnloada. Ynless, Ryazzimoschar.



distinctive features. Here the transition between one pattern and the next is abrupt, the design is sharply brought out. Generally speaking, the patterns are bold and vigornus, as though in mnvement, and nne gets an impression of iridescence.

Then there is the colnured lace of Ryazan or, as it is also called, Mikhailovskoye lace. Made in the little town of Mikhailov (in Central Russia, near Ryazan), it is so colourful that it may be taken for embridery.

It is extraordinarily bright, and preserves features of national peasant costume. Reds predominate, and the effect of a design in red is heightened by threads of yellow and deep blue.

Whole articles are not made of Mikhailovskoye lace. It is used for trimming, adding brightness and freshness to whatever it decorates.

Despite the fact that it has been going strong for centuries, Russian lace is in as great demand as ever.



The lece mets pictured here end at the foot of the pege are from Kirov (formerly Vyetka)





"I remember when I was a gay young thing" is the name given to this lace penal from Vologde, worked in linen thread



Vologda laca-makers at work





can we kill death

by Victor PEKELIS

condensed from the newspaper LITERATURNAYA ROSSIYA

Farly, man lived for 20 years, on

the average. The ancient Romans did four years better than this, In feudal times the average life span reached 31 years. In 1926 in Russin, life expectancy was 44.3 years, shooting up to more than 68 years in 1959. Today Russians can expect to live to be 70, on the average, and some day 100 years may be reached.

Will the average life span keep rising after that?

As well as the concept of average life span, science uses the concept of a tential life span—the longest file conceivable. Experts differ in their estimates. Among the figures named

are 112 and 124 years.

Certainly, some people have already lived to be 156 or even 186.

Dr. Alexander Bogomolets, an eminent Soviet pathophysiologist, has set the fisure at from 150 to 150.

years.

Gerontology is the study of old of age in man. Geriatrics, a comparatively new field of medicine, embraces the study, prevention and treatment of the diseases of old age, Hardly any science produces more rebypotheses and theories than these. To quote a Soviet encyclopacdia, agging is a natural process resulting from continual biological chanses

comprising the life process.

The decline in capacities

Human muscle power reaches a maximum between 20 and 30 years of age before it begins to go downhill. This period brings the reproductive function to a peak—man's sexual activity reaches a climax and gradually diminishes to the minimum towards the age of 75.

Metabolic changes in the brain accompanying ageing bring about a gradual decline in intellectual capacity. The power of logical and associative thinking weakens markedly after 45.

Assuming that ability to reason at 20 equals 100 units, at 50 there are only 80 units left and at 60 only 75. Sad to say, ageing begins far too early

Medicos, alchemists, priests, magi they bave all contributed to the study of old age. So now the list of books on gerontology and geriatrics numbers 40,000. More than 200 hypotheses have been advanced to explain the secret of ageing. Science has attempted to storm old age from every possible position.

August Weissmann, an eminent German geneticist, constructed a theory explaining why death is inevitable. He believed that the human body grows old by losing the ability to renew its cells.

Ilya Mechnikov, a distinguished Russian microbiologist, by his intoxication theory, thought that the body was gradually poisoned by its own

was gradually poisoned by its own waste products.

Other scientists, without devising theories, were practical. Edouard

incorres, were practical. Ecousard.

Brown-Sequent, a French physiologist, thought he could rejuvenate himself by injecting a fresh extract made from the testicles of dogs and rabbits. Dr. Steinach, an Austrian, dissocted and tied his patients' spermatic tubes in a bid to stimulate multiplication of the cells that were believed to have rejuvenating properties.

Paris researchers, caused a sense.

tion by transplanting the testes of anthropoid apes and of young people to old men. But no amount of this kind of effort brought any encouraging results.

Attempts at rejuvenation have grown rapidly in the twentieth century. The material used was taken from thyroid and pituitary glands, and later a combination of pituitary, suprapreal and thyroid plants.

suprarenal and thyroid glands. Dr. Bogomolets made a serum from an extract of spleen and marrow from young people. Doctors also suggested hormones, vitamins, tissue extracts, novocaine, a growth stimulant obtained from oil, and even melted

snow.

Scientists later assumed that perbage a key to prolonged youth lay hidden in the oervous system. Attempts were made to bring about beceficial effects on the ageing body by means of artificially induced sleep, because sleep intensifies regeneration processes in the brain.

Today the latest device is intensive biocurrents. Ukrainian scientists have evolved a hioelectric stimulator which is thought likely to make possible control over the functioning of individual nerve and muscle systems

Interesting work has been done by Professor Arshavsky, head of an age physiology and pathology laboratory in Moscow. His assumption is that the body's working capacities grow and are maintained above all by

and are maintained above all hy physical work.

Many hypotheses bave already been replaced by new ones. The very idea of fighting senescence seems to nossess the secret of eternal youth.

"Renair service"

Man could hardly have anticipated that some day his organs would be subject to replacement, like parts of a machine. Yet medical and other researchers have provided artificial joints of metal, plausics, resins and oylon, artificial parts of tantalum and nylon for the abdominal cavity, artificial plates for the skull, and

artificial gullets and tracheas. Artificial kidneys have been in use for some time, and there have heen effective experiments with an artificial

"speaking" larynx.
Several models of an electronic eye and an electronic ear (helping to achieve 75 per cent of normal hearing) bave been designed. New plastics, which do not affect metabolism, and which can be used in contact with living listues, are help success.

fully tested.

These are all forms of the body's
"emergency service". Perhaps a
more sold repair service is about to
be established. Surgeons have long
looked forward to heing alle to extract any organ from the body, to
operate on it and then return it to
where it belongs, and to replace
worn-out organ with donor-supplied

Current, intermediate and capital repairs, if administered with skill and in time, are bound to prolong life. Dr. Vladimir Demikhov, a noted Soviet pathophysiologist, envisages the entire replacement of all irretrievably affected organs by bealthy organs aken from donors as "one of the key directions of search for ways to meserye buman life".

No substitution of organs, and no amount of subsequent regeneration, can prevent old age from affecting the overall balance of the viting processes—or from reducing the body's "safety factor". Thousands of external impacts make it difficult to maintain constancy of the body's internal medium and its "resultating the producing the produc

organs".

This is why researchers bave recently become interested in the body's self-regulating process. Medicine has in this way been wedded to cyhernetics, which has advanced its own hypotheses to combat seeine.

One of these hypotheses has been formulated by Dr. Nikolai Amosov, a ooted Soviet scientist, surgeon and engineer, whose book *Thoughts and the Heart* was reprinted in part in Sosatnik of June 1967.

Spannike of June 1967.

Man has a deletaes, self-regulating system operating oo definite programmes, of which two types can be traced. Human genes contain "animal" programmes, oe of which provides, for example, for the instinct of self-preservation. But man also has on incomparably greater number of seculiprogrammes to follow. Instead of being in his genus, these are conditionable of the self-preservation of follows. The self-preservation of follows are conditionable of the self-preservation of follows. The self-preservation of follows are conditionable of the self-preservation of the self

programme comprised of a great many animal and social sub-programmes. Viewed from this angle, man is healthy when his physical development obeys this programme, and ill when the programme is violated under the impact of biological, physiological, psychological and other factors.

Like a hrilliant programmer, oature bas provided for possible violations of its programmes in the form of reserve programmes designed to correct deviations. But if human beings have built in recovery programmes, why, then, do they die of diseases?

Regrettably, unpredictable circumstrance arise in the body—deviations from the normal way of life lead to accumulation of harmful substances. Besides the programmed actions, there arise interferences with the regulated system. Like any other system, man accumulates regulation errors.

And how about the brain? Can it be replaced when it grows old? In the way disturf fature, at the end of the way disturf fature, at the end of the way disturf fature, at the end of the way disturf fature, and the way disturbed upon, one can envisage the coupling of man-made and natural brains; the two might work together for some time, the artificial brain being taught all the habits and tastes of its "maners." When the old, living brain was removed a man would live on with the artificial brain, which would contain full information should be not so that the artificial brain, she would contain full information should be not so that the state of the

If the idea is carried further, an artificial brain coosisting entirely of artificial components might be implanted in a body. In other words, a man—body and brain—could die, but his intellect could be passed on to

the artificial brain.

Io this way, theory makes immortality possible. But once we bave approached old age from the point of view of cybernetics, let us lend an ear to a statement by leading cyberneticians, which says, "Maximum stability—immortality—leads to stannas."

tion and ends evolution".

Perhaps this paradox is another way of saying that to seek the "clivic

way of saying that to seek the "elixir of immortality" is to invoke the eod of life?



Painter-poet of his native land

Sergei Gerasimov (1885-1964) by Andrei CHEGODAYEV

from the magazine ISKUSSTVO

All his life, Sergei Gerasimov painted his native countryside and the people who lived there. For his series "The Russian Land", he was posthumously awarded the Lenin Prize.

For the last two and-a half sears of his life, Sergei Gerasimov fought a fatal illness. But he was still working to the end, carrying on with the painting he loved. The watercolour landscapes he did from his hospital bod are full of the grace and harmony that characterised his firest work.

He had always worked tremendously hard, not having a facile exhnique, and he was not uniformly uccessful. Showing through all his work was his life-long fascination with the poetry of the Russian undergrade.

Born and hrought up in Mozhaisk, Central Russin, he was to love this region above all others, to the end of his life returning every summer, accept during the war, to live and ork there. The magnificent vista seen com his home on the high bank of the "oskya River served as a rich and oskya River served as a rich and

half ever-changing source of impressions nov for his painting. was Yet Mozhaisk was more than just

landscape. It was there that, as a boy, he got to know the life of the Russian countryside, of the small town, the moments of gladness and

poople.

By the time of the October
Revolution, Sergei Gerasimov was a
fine painter and a mature one. His
first major work of that period showed
that he had entered a new phase in his
artistic career. A giant panel called
"Master of the Land" showed as

hlack-bearded peasant holding a red hanner. Painted for the first anniversary of the Revolution, the huge picture was hung in the centre of Moscow, completely covering the facade of the former city hall.

The same year, Gerasimov at last finished what was to be one of his finest oils, begun six years earlier. This was a full-length portrait of his father, a very tall, thin man with a kind and melancholy face This anstere-looking canyas was one of the few that always hune in the

nainter's studio. Gerasimov's principal theme at this time was the people of the Revolution. He produced a whole series of pictures featuring the men and women of Mozhaisk, mostly people he knew well, but transformed into types characteristic of the time.

By 1924, Gerasimov had ahandoned this rather grandiose manner and gradually settled into a warmer, more personal style-a straightforward yet peculiarly centle treatment of the subject which was always seen hathed in a clear light

A self-portrait done in 1929 or 1930 eives us a good idea of the painter's inner world at the time. This is the finest of all his self-portraits. and, incidentally, the hest likeness. However, the crowning achievements of the 1920s were a large canvas, "Siberian Partisans Take an Oath" (completed in 1933), and "Collective Form Watchman"

At this time, too, Gerasimov did some book illustration, though it seemed of secondary interest to him until 1934, when he began a series of watercolours to illustrate the works of the nineteenth century poet Nikoloj Nekrasov, Gerasimov worked with great enthusiasm in this new medium. His next effort in this field took 15 years of work, on and off. The whole gallery of characters in Maxim Gorky's novel, The

Artamonovs, seemed to inspire him. Significant in Gerasimov's life was an alhum called "Reminiscences". nainted in Samarkand, Central Asia, where he went when the war began, The long, dreary evenings in the winter of 1941-42 Gerasimov spent filling three ordinary office ledgers (the only papers available) with nictures of his beloved Mozhaisk.

beginning with his childhood and including portraits of his parents, with every sort of impression, some sparkling and gay, some frankly wistful, and all permeated with the ensatest warmth and tenderness. Most of the oil paintings he did in the 30s and later, and a good part of the watercolours, were landscapes But Gerssimov never painted landscapes "in general", without faith fully conveying the feel of a place and the time it was painted, though detail for its own sake held no interest for him. This is especially true of Moz-

haisk, where he knew every mood of light and practically every inch Though art was his vocation, th most vital concern of his life, thi artist took a serious interest i public affairs. Yet Gerasimov private was not easy to know.

the ground.

Most of those who met him were impressed by the casy, polished elegance of his wit. Few were invited further. But he was true to himself generous and sincere, though reticent in personal matters. He was excellent teacher and a masterl painter.

Ton: "Lilac" 1955 Below: "Nude 1940







100 "Mother of a Partisan", painted in 1943





"Ilya Artamonov". Illustration to Gorky's "The Artemonovs".







"Siberian Partisans Take an Oath". 1933



"The Oaughter in-Law", Illustration to N. Nekrasov's

"Who Can Be Happy and Free in Russia?"







Perhaps the reverse, for falling is softer!

Left: High spirits round the Yolka, or Christmas Tree. At any moment a Snow Maiden may appear through the birches . . .





Below: A roc's eggs, maybe; deposited from some magic carpet?



Snow is a sculptor, too. On the left, the hooded lady.



And could these be Gogol's "Dead souls"?









Many couples take their young children out skiing at the weekend —and many a father ends up like the one pictured above.



4

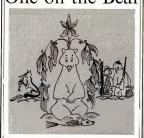
Winter brings out the great army of ice-hole englers, too. For this you need cold-proof clothing and bags of patience.



Whoops! If you try to pull up on the way down, you're likely to finish with a spectacular series of somersaults.



One on the Bear



by Victor GORBACHEV
from the magazine LESNAYA PROMYSHI ENNOST

Drawing by Oleg ISHANOV

I was sitting smoking and chatting quietly with a friend on the high bank of a little river running through the untouched Siberian forest, when suddenly a huge brown bear emerged from a thicket 50 yards away.

He looked around cautiously, saiffing the air, but as we were on his lee side he did not notice us. After standing motionless for a white, he began to walk back and forth along the water's edge, treading gently. Finally, he clambered on to a flat-topped boulder rising slightly above the water.

The bear bent his broad head close to the water and sat as if frozen for 15 minutes or so. Then abruptly, with lightning speed, he struck the water with his paw and a fair-sized fish sailed through the air and landed on a sandbank.

The bear scuttled nimbly to the

spot and gobbled up the fish. Then he resumed his position on the boulder.

We were watching with bated breath. Soon the bear landed his second fish, then a third. He ate all of the second, but only some of the last, throwing the remains on the sand.

After watching the bear fishing for an hour, we found it boring just to sit there without moving, and my friend was just about ready to shout at the "angler" to scare him off when we spotted a red fox in the undergrowth behind the bear. Slowly with eyes fixed on the bear's back, the fox stole along towards the bear's back, the fox stole along towards the bear's back.

With only two yards to go, he crawled along hugging the ground,

and we could barely discern his einnamon coat against the vellow sand

made off with another fish.

The fox snatched one of the fish but instead of giving himself away by scurrying back into the undergrowth with it, he retreated slowly and noiselessly. In a few minutes he returned and approached the booty more boldly. The bear, engrossed in his fishing, noticed nothing and the fox

"wWhat a smart one!" my friend whispered admiringly. At that moment the bear turned suddenly and, seeing the fox, growled menacingly and began to chase it. But the fox had already disappeared into the thick undergrowth, where the bear could not follow.

The shagey analer returned to his

fish and began to devour it with an air of gloomy determination.

Then my friend rose, let out a piercing whistle and shouted to the bear, "Right, old man, the show's over. We get the rest of the fish!"

The bear made a choking sound perhaps from annoyance, perhaps because a fish had gone down the wrong way. He scuttled for cover in the firs without even a glane at us. For a long time we beard the crackle of dry branches as he made off through the thicket.

Descending the steep hapk, we

took what was left of the catch and went to a nearby hunting lodge, where we set about making fish soup. It was superb.

"I'll have another one on the bear," said my friend, helping himself to a second bowl of soup.



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Homer did not record if the hero of his Odyssev landed at the site of present-day Odessa. But if Odysseus turned up on the spot today-and in Odessa anything is possible—he would be proud of the city that bears his name.

He would like its architecture, more to the right-well, you won't its intimate atmosphere and, of

course, its people, with their

inexhaustible humour If he were to ask the way to a certain place he would as likely as

"set there!"

not get the reply, "Listen. If you turn right, then left, and go straight on, then to the left again and once

On the trolley-bus, instead of the usual "Fares please!" he'd be more likely to hear, "You think Pushkin's

going to pay for you?" . Odysseus would see and hear a great many interesting things in Odessa. But the most interesting

of all is the port.

All kinds of vessels, from and Marseilles.

50,000-ton ocean liners to tiny fishing trawlers, put in at Odessa. Between them they fly the flags of 30 states, and every year carry away 15 million tons of cargo and countless passengers to Varna in Bulgaria, Constanza in Rumania, Piracus, Naples, Alexandria, Beirut









The Duc de Richelieu, whose monument stands at the top of the steps, would be astonished to see the port today. A member of the same noble house as the famous Cardinal, and a fugitive from the French Revolution, he was appointed Governor-General of Odessa at the end of the eighteenth century. The port was at that time a comparatively obscure part of Russia. He could hardly have imagined that it would eventually become one of the biggest ports in Europe.











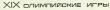


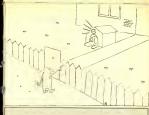












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LINCOLN'S RUSSIAN GENERAL

by Kyrill Kalmanovich from the almanoc PROMETEI

"I have seen from the newspapers that a cortain Turchanirov, a retired Russian Army officer, is in ormand of a regiment of illinois volunteers. I suppose he left Russia without permission. This is no place for an officer who had the honour to serve in the Army of our most gracious monarch."

Ambussedor in Washington, 1862).
"I have never seen better military training then in

(Brigadier-General Don Carlos Buell, after inspection of

The name of Colonel Turchaninov appeared frequently in American newspapers during the Civil War. Who was he?

your ragiment."

Ivan Turchaninov was born in 1822. He attended the St. Petersburg Artillery School and continued his military education at the Academy of the General Staff. Holding the rank of colonel, he took part in the Crimean War (1853-56) and had

every opportunity to continue an outstanding career, but preferred to retire from the army. Announcing that he needed medical treatment, he went abroad—first to Britain and then to the United States. He completed an engineering ocurse in Philadelphia and later worked for a railway construction company in Chicagon.

When war broke out between the

Russian offered his services to the government and was placed in command of the 19th Regiment of Illinois Volunteers, which formed part of the troops of General Don Carlos Buell. The regiment earned a reputation as one of the best in Sherman's Army.

Turchaminov's Russian military training proved of value in preparing the patriotic but inexperienced volunteers. The energetic colonel started publication of a newspaper for soldiers at Army Hendquarters. At a time when there were no Negroes in the rest of the Union Army he recuited 150 Negroes to his regiment.

Many members of the Union Command did not share Turchaninov's views. Quite a few senior officers were secret supporters of the Confederacy, and there were others who advocated a compromise. After a series of effective opera-

tions Turchaninov's regiment occupied Huntsville and Athens, Alabama.
Then the regiment was pulled back
for regrouping, leaving only a small
garrison in Athens. The Confederates
took advantage of the situation,
attacked and captured the town.
The greater part of the garrison was taken prisoner. Shortly,
spine-chilling news came from the
captured town: the prisoners-of-war

had all been executed.

Turchaninov quickly concentrated his forces and counter-attacked. Athens was retaken, and Turchanismov ordered every enemy soldier who had refused to surrender to be executed on the spot. As a result of this summary act, Turchaninov's detractors accused him of crutely. A special

commission was set up to consider the matter. The Colonel was court-martialled; the court passed a verdict of guilty and sentenced him to be explained.

This decision triggered off a Press campaign. Many Northern patriots and opponents of slavery demanded a retrial and intercession by the President. As a result, the sentence was

stoem. As a resuit, the sentence was forwarded to President Lincoln for review.

In September 1862, President Lincoln wrote that the court decision was biased and unjust and ordered it quashed. To demonstrate his high regard for Turchaninov he conferred on him the title of Briesdier-General.

The people of Chicago gave a rousing welcome to the new general, which, according to a local newspaper, left no doubt as to the public's opinion of the court-martial. In 1863, Turchaninov, in com-

mand of the 3rd Infantry Brigade, took part in another series of military operations. In the Battle of Chickamauga he applied the tactics of Russian bayonet charges. Despite some setbacks on adjacent sectors the battle was won. Turchaninov's Brigade also played a decisive role in the Battle of Missienney Bidse

In 1864, ill-health forced Turchaninov to retire. Later he accepted an invitation from the War Department to study the history, tactics and strategy of the Civil War. He published a number of books, including one on the Battle of Chickamauga. The last years of his life were

tragic. Suspecting that War Department officials were treation him certs in small towns. Two of his former army colleagues who had reached positions of influence obtained a pension of \$50 a month for him. But the sick old man, exhausted by his wanderings,

ended his life in a mental hospital. He died on April 18, 1901.

Ivan Turchaninov was buried with full military honours. The gun carrioge with his coffin on it was followed by many old comradesin-arms, and throngs of ordinary citizens who remembered the role he had played in the American Civil

MUSIC DISSOLVES INFRASOUND

War

Back in the Twenties, it was probably because it is in the discovered in France that operation had a had effect on many people, tiring some and adversely affecting the mood of others. Strong winds and storms and even trains passing at great speed can also create unpleasant sensa-

Scientists established that the cause was maudible infrasound, canable of getting through the thickest wails organism was the sound with everyone relieving people of the seven-cycle frequency, infrasonic harassment

same frequency as bio-

It was found later that music or other muffled sound. Just switching on the radio stops people feeling tired or Infrasound is dissolved, as it were, in

music. Installation of radio in offices and factories has a positive effect on the mond and performance of em-Further investigations re- ployees, for music, provided vealed that the most dan- it is not too loud, means gerous thing for a living greater productivity from from the newspaper TRUD

"Wanted: Turners, milling-machine operators, maintenance men, mechanics, fitters, assemblers, etc."

Ads like this can be seen in show. based on a high general educational cases in the streets outside factories standard

and in newspapers and magazines. It is estimated that the national According to the Central Statistieconomy already needs from 2.5 to 3 cal Board, about 60 per cent of the million skilled workers acqually with workers engaged in the USSR's key eight- or ten-year education. The industries have an eight- or ten-year need for skilled labour power grows education. This is more than the faster than the number of workers present technological level of produc-Consequently, school-leavers who tion requires. At the same time there are not going on to colleges and uni-

is a shortage of skilled workers. There are several reasons for this Technological development means that the workers need a broader theoretical knowledge and have to use their brains more. Production now requires independent logical thinking, emotional maturity and constant perfection of knowledge rather than well-developed practical skills. These qualities are developed to a considerable extent at school.

The training of the modern skilled

industrial worker should therefore be

versities or technical schools dan choose jobs with a future at factories. ultimately becoming highly skilled workers. Naturally they must first acquire an adequate training, not a short-term affair on the job, but a thorough vocational training at a special school. A poll taken among a group of young people who, after finishing eight- and ten-year schools in 1966.

went to work at the two biggest industrial enterorises in Moscow

-the Likhachev Motor Works and

discontented

the First Ball-Bearing Plant—has revealed that the trades the youngsters were taught on the job were picked up quite accidentally and did

not appeal to most of them.

Toose who go through ordinary schools have a good general education and fairly high demands on life, but they have no vocational training. At first they can be used as unskilled workers but this is liable to put them off factory work altogether. They cannot apply their knowledge to the work they do not all you become

Experience has shown that the most reliable and highly skilled workers get their training at vocational schools. But the flow from these schools is not nearly enough for industry. And not only because there are not enough of these schools. Even the existing ones have vacancies and it is more and more difficult to persuade youngsters to enter them.

At present almost all children finish the eight-year school. Then they are in a dilemma; whether to continue at the same school and finish ten years there, getting a complete secondary education, or to enter a specialised secondary school, or a vocational school, or to go to work. Ten-year schools and technical schools give students a complete secondary education and the right to go on to university or college, while vocational schools teach them a trade but do not give the School Certificate which makes them eligible to study at a higher institute. This explains why the majority (80 per cent or more) of boys and girls prefer to go on studying at general schools or technical schools.

Material standards of the average Soviet family have risen considerably in recent years. And naturally the parents want to give their children at least a complete secondary education. Even families who have been workers for generations do not want their children to enter vocational schools. Most pupils in these schools are orphans, children of unmarried mothers and backward pupils transferred from ordinary schools. Reinforcement of the working class with such a negligible intake of voungsters is an abnormal phenomenon both socially and politically and is fraught with undesirable consequences for society.

It is quite evident that the present system of public education, which, when introduced, ensured technological progress, is now behind the times; vocational training does not meet the requirements of modern production and it will become increasingly inadequate as time goes on. Vocational schools must not only teach boys and gifts a trade but also give a School Certificate enabling them to go

on to college or university if they wish. Experience so far has been fruitful. More than 100 vocational schools now combine industrial training with general secondary education for School Certificate. Just one school of this kind in Leningrad has trained about 1,500 turners, fitters and milling-machine operators in the last six years. And its pupils are in far greater demand than workers trained

at ordinary vocational schools





DRIVERLESS LORRY

Mucoso Automobile and Boad Transport Institute has tested a directlers berry controlled by devices programmed to follow a route "written" on the road by means such as radioscribes. Best results, beave come from using a guiler called slong the centre or side of the road, charged with alternating current. This sends out against which are packed up to the lover through gear. Using this device the lover keeps at a constant distance from the cibic, and can also make sharp turns with maximum them.

The automatic lorry is designed for test runs, dusty or very rough roads, for poor-visibility conditions, and for repetitive, closed-circuit work such as in quarries, road building or factory yards. It is intended also to use the new device in the far-eastern and far-northern regions of the USSB.

The tests so far have been carried out on tip-up lorries in quarries.

From the journal AVTOMOBILNY TRANSPORT



CACTUS ON MARS

With the aid of a powerful telescope, large dark spots have been observed on Mars. Astrobotanists of Kazakhstan are of the opinion that these dark areas on the planet are covered with plants resembling eactus.

This supposition is based upon a comparison of spectrophotometric analyses of cactus which grow in the most barren desert lands on earth and the spectrograms of sections of the surface of Mars.

The Kazakh astrobotanists hope to establish the principal differences in the spectra of wild and cultivated plant life. This, they believe, will provide a scientific basis for judging whether life exists on other planets.

From the weekly NEDELYA

REFLECTIONS WHILE FACING A RED TRAFFIC

Leanid Likhodoyen, a sairist popular in the USSR, was born in Odossa in 1921. It was in his second year at university when he became a front-line salder. Initially he was seriously interested in writing poetry—his first sold vivrses came off the press in 1933. But he became increasingly drawn to satire, although he still writes verse, treart notes and plays verse, treart notes and plays.

Reflections. White Facing a Red Traffic Light was published on his return from a trip to Poland. No doubt the piece was occasioned by thoughts of Mascow and memories of Russian pedestrians tripping acrass the road against red traffic libris.

by Leonid LIKHODEVEY

from LITERATURNAYA ROSSIYA

I stand on a corner in Warsaw, waiting for the traffic light to change from red to green, and thoughts en-

gulf me. Warsaw seems like a home from home, and you feel as though the people are not strangers at all. They seem to live their lives without caring too much about show. But there is one aspect of Warsaw life in which a certain degree of ostantation is not considered bad form.

It is cars.

All the cars in Warsaw are the fastest and most powerful in the world-irrespective of their actual speed or the number of horses tucked away under the bonnet. In fact, I would venture to say that Warsaw cars are quite striking literally, rather

than figuratively. It would be wrong to say that they have a supergloss finish or a super-chrome lustre. Far from it. Most are not given the spit-andnolish treatment, are not groomed

like racehorses. The casual un pretentious style of living has left ies imprint on them as well. You see ears minus wheel-caps, others could do with a good clean. It is not the package that counts, bowever, but the contents-in this case, speed and power

The main thing is the take-off. For instance, you see a mini Trahant. It is saddled by an unusually nonchalant young man, who dies in his spurs-the Trabant seems to neigh and to rear, and then flies off into unfathomable distances

I think such heights are attained by years of practice and by force of example from all the other cars. The midget Sirena is beginning to do tricks that were formerly the prerogative of the Fiat. A six-cylinder Fiat seems to be flying in mid-air even when parked. The bad example it sets is most unsettling. However, to some it is a science to be studied You may not know that with a

car you can express not only the recklessness of a cowboy. You can also convey gentleness and boundless trust. Once I saw a pretty young thing gliding up to a cafe in her Moskvich. The engine purred. It was a date. A young man dashed to the car and slipped in beside her. She passed the reins to him and they were off, no doubt, to seventh

heaven. . . .

In Warsaw, people drive their cars with verve and flair. The cars are not in the least shy of one another, though they do not disgrace themstives with smash-uns. All the different species of vehicles have one common denominator-speed. The type or model of car does not matter. Who knows why and for what sins the Devil presented one with a Renault, another a Moskvich, a third a Mercedes and someone else with a Fiat? It's how you drive that

counts. Understand? The whole of Warsaw is crisscrossed with dotted lines, arrows, zebras and traffic islands where nedestrians are often stranded. waiting while the chaos of cars surges to and fro, up and down, back and forth, with snorts of impatience and disappointed acreeches of the brakes

Relations between Warsaw car

drivers and Warsaw pedestrians are severely practical: a car is entitled to spare parts, a pedestrian is not. So pedestrians do their best to emphasise this advantage of the car and always give one the right of way to the repair shop. What is more, the pedestrians are canny types. They have figured out that a funeral at the expense of the driver

who ran you down is not so good as That is why pedestrians remain standing on the pavement, their eves glued to the traffic light. They are experienced people. They won't be enticed by the yellow light. The only thing that can get a pedestrian to set foot on the roadway is a green light.

it may seem at first glance.

Any time of day or night, whether the traffic is thick or non-existent. you will always see pedestrians with eyes fixed on the traffic light. They wait patiently, cheerfully, and even carry on small talk as if nothing unusual were happening, as if this is the way things should be, cars zipping along on the roads and pedestrians walking on the pavements. Warsaw car drivers are the demon

kings of the roads, and the courteous Warsaw traffic cops are under their spell. In fact, the cops do not even carry a traffic baton-instead, they have something that looks like a

long-stemmed flower. All the time I was in Warsaw, only once did I see a cop blow his whistle at a road bully. And he really was a bully. He made a U-turn at an intersection during a red light; that is, precisely at the moment when a respectable driver would be too embarrassed to break a traffic rule. when he would consider it unbecoming or tactless.

The road bully pulled up and gave the cop a very-nice-day-isn't-it smile. The cop shrugged his shoulders in astonishment and said. "Excuse me. sir. On the way to your wedding? You could wind up in the cemetery!"

"As you like, Mr. Inspector. Only not in jail," came the reply. "But you do understand that you're

way?" queried the inspector. "Oh, yes! Quite so!" exclaimed the bully, joyously. "Your comprehension gladdens

my heart," declared the cop sig-"Merci," said the bully with a

sigh of relief.

The cop brought two fingers un to the peak of his cap in formal salute. and the road bully brought two fingers nonchalantly up to his greying temples. His car roared and

disappeared at break-neck speed. Such living makes drivers virtuosi and podestrians bulwarks of pati-

ence, even though in Warsaw there are many places to which pedestrians could hurry as well as drivers. But what the law comes down on savagely in Poland is drunken driving. Such cases are rare, but just punishment is essential because to have such freedom of the roads, and to drink on top of it all, would be a

little too much. When I first arrived I thought



there was bitter antagonism beon the way there if you drive this tween pedestrians and drivers. But after a few hours I understood there was none. With my own eyes I saw a driver stop his car, get out and give a pedestrian directions on how to get to his destination And what was most surprising, t nedestrian did not utter a six curse at the driver. In fact, there i a fair number of entertaining co versations between drivers pedestrians which do not warrant police interference.



No, there is absolutely no antagonism. But there is something else altogether different: a sense of personal responsibility. It is not the notice who see that an able-bodied, adult pedestrian does not pull off some antic typical of a two-year old: it is up to the able-bodied, adult nedestrian himself to stay out of trouble. And the police step into the picture only when the abovementioned individual regresses into childhood and loses self-control.

An adult is considered an adult because society relies on his wisdom, elementary independence and



responsibility to himself. Or, in other words, he is one who understands what a red light means The same goes for the car drivers.

who in Warsaw are mainly adults. That is why drivers do not instruct pedestrians and pedestrians do not instruct drivers. And in general, no-one teaches anyone, because to teach a teacher is to spoil him.

And so, here I am, standing in front of a Warsaw traffic light and waiting. It is well into the night. There are very few cars, But to step into the street when the light is red is not done. Only unsophisticated provincials can allow themselves such a move.

The red light shines brightly and serenely. Screeching round the corner at strafing level comes a car. Centrifugal force seems to tear it loose from the asphalt.

The car is followed by a horsedrawn carriage in waltz rhythm. In the carriage are a young counte. holding hands, looking tenderly into each other's eyes. The twentieth century means of transport career by, and here we see the nineteenth century trotting past. True, the latter costs 50 zloty more, but what is 50 zloty when one can create an illu-

But the light has finally turned green. I step into the street and head for the other side. I walk like a person for whom urban discipline is both pleasant and wise. I walk as a person who has almost earned a degree in the art of being a nedes-

trian. I feel fine, just fine, . . .

ALEXANDER TVARDOVSKY'S POETRY

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from his Autobiography

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In no sense was possession of that piece of land a thing to be envied. But for my father, who had worked for years as a blacksmith to earn enough to put down the deposit required by the bank, that land was precious, even secred. And from the very first be taught us children to love and respect.

My father was a literate man and even a well-read one by village standards. Books were no rarity in our house, and in the winter whole evenings were given over to reading aloud.

I started writing verses before I could properly read and write. There was no metre, no rhyme, nothing of poetry at all, but I distinctly recall that I had a fervent desire, so passionate that my heart nearly burst, to achieve all that—metre, and rhyme, and music—a desire to give birth to them, and without delay: a feeling that still accompanies any new plan of

mine.

In summer, 1925, I broke into print for the first time, with a verse called "My Cottage" in a Smolensk newspaper.

At the age of 18 I went to Smolensk where I entered a teachers' training college. I did a successful two years there, and then went on to the Moscow Institute of History, Philosophy and Literature.

That period was perhaps the most

decisive and significant of my literary career. Those were the years when the countryside was in the throes of a great reorganisation based on the principles of collectivisation. Everything that was taking place on the farms at that time affected me extremely closely—in everyday life and in the social, moral and ethical

Tearing myself away from my books and my studies, I travelled out to collective farms as correspondent of regional newspapers and fervently hunted out all that made up the newly developing way of life in the country-

side

After each trip I noted down for my own reference what new things I had discovered in the complex process of establishing collective farm life. All this constituted the theme of my poem The Promised Land in 1936, which won the approval of readers.

and critics. I count that poem as the real start of my literary career.

My principal literary work during the Second World War was Vastit Tyorkin ("Book about a Fighter").

Whatever the intrinsic literary worth.

of this poem, it gave me real happiness to know that my work was of some use. *Tyorkin* was my lyric, my pamphlet, it was my song and my sermon, my anecdote, my story-teller's fancy, my heart-to-heart talk, my dialogue with an even.

At about the time I wrote Vasili Tyorkin and my verses Front-Line Chronicle, I started on my House by the Road, which was not finished until after the war. Its theme was war, but from the other side—from the point of view of home and family, of the wife and children of a soldier and

how they went through the war.

Always, side by side with my verses, I wrote prose—Press reports, feature and other articles, and stories. In my thoughts and my plans for the future, prose had always occupied a more extensive position.

Whereas I knew the Smolensk Region and gained some happy and priceless memories from it simply because my mother and father lived there. I myself made the acquaintance of Siberia, with its austere and magnificent beauty and fabulous prospects, when I came to maturity. This new link with "distant lands" had a direct effect on my main work of the

fifties, Space Beyond Space.
Since the mid-fifties I have devoted a considerable part of my working

time to editing the magazine Novy

Mir (New World).



Death and the Soldier

from the poem VASILI TYORKIN

From beyond a distant summit Came the battle's din and glow, But our friend Vasili Tyorkin Lay alone upon the snow.

And the snow was stained with scarlet Where the wounded hero lay. Death came stealing like a harlot: "Come on, soldier, come away. It is time that you were going—

Let me lead you through the gale, Blizzard blowing, blizzard blowing, Blowing snow across our trail."

Tyorkin started as he lay there, Scarcely breathing in the snow.

"Who invited you, you hussy? I'm alive. I will not go." Death detected some misgiving:

Death detected some misgiving:
"It's no matter how you strive—
You cannot be counted living
Just because you are alive.

I have touched you with my shadow; Even now you are too weak To be conscious that the snowflakes Lie unmelting on your cheek.

Do not fear the dark before you— Night is just as good as day."
"That's all right, but what, you whore, you, Would you like to have me say?"

This remark, so unexpected, Disconcerted her a hit: "What I'm asking," Death reflected,
"Is a trifle, you'll admit.

Just a sign that you are willing.
To submit to my demands.
That you're sick and tired of living—"
"In a wood, throw up my hands?
Death considered, drawing nearer:
"Well, why not? It take the balane."
"Sorbing doing, life is desere,"
"Solily boy, it's all the same,
If you want it or you don't,
All the same your sight is fulling.
Lins are naline.

"See how quickly night is falling,
Why prolong your misery?

If you're wise you'll heed my calling—
Get it over—come with me."

"I will stay."

"Don't be foolish—you are freezing.
You will not survive the storm.
Let me wrap you in my blanket
And forever keep you warm.
You believe me. You are crying.
Your submission makes me hold..."

"Don't you trap me with your lying! I am crying from the cold!"

"Tears of joy and tears of pain—
All the same! On the plain
Night is swiftly drawing near;
They will never find you here.
And even if they found you,
Would your happiness increase?
Once again your cares would hound you—
Better lie and die in peace."
"You are trying to ensuire me."
'You are trying to ensuire me."

I have hardly lived as yet."

"If you live—what then? What of it?"
She was bending to his ear.
"If you do—you think you'll love it?
Love the cold, the dirt, the fear?

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Life is not a bed of roses, Think of everything once more—" "Think of what? It's all familiar,

You forget that this is war."

"Once again you'll have the worry
About bomefolks, about home—"
"That's the reason I must burry—
Kill off Fritzes and set home."

"Home. Perhaps. If home were waiting—
If your home were still intact—
But except for bricks and grating,
All is ashes—that's a fact—
All in ruins—"

"I can build it, I know how, and I am strong." "The land is wasted."

"Once I tilled it."

"Pipes are twisted."

"Not for long.

'Jack of all trades'—so they called me.
Once I'm back, I'll mend the harm."
"You will—unless—don't stop me—
You will, unless you lose an arm.

Or in general are disabled—"
Tyorkin drew a sudden breath.
Was there nothing that enabled
Man to triumph over Death?
He was ready for submission,
Worn and weary, night at hand—
"Listen, Death, on one condition,

I'll transfer to your command."

And the boy, where he lay bleeding, So alone, so young, so weak, Started quietly to speak, In a tone of earnest pleading:

"I'm no better than the others, I can die as well as they, But when all the flighting's over, Will you free me for a day? So that I may be in Moscow For the victory salute? So that I may hear the salvo That the Moscow surs will shoot?

"While the rockets still are flaring, May I hurry home to see How the village folks are faring? They will be expecting me. And when friends come out to meet me At some old familiar spot, May I answer those who greet me With a word?"
"You may not."

Tyorkin shuddered as he lay there, Yet some strength seemed to revive. "Get away from me and stay there, I'm a soldier still alive! I will yell until I'm blue, I may perish on this hill, But I'll never yield to you Of my own free will!"

"Take it easy. By succumbing You will only prove the rule—" "Stop! They're searching! Someone's coming! It's the medics!"

"Where, you fool?"
"There!" His eyes were shining.

Death went weak with laughter then:
"That's the squad that comes to bury!"
"Just the same, they're living men!"

One came over, then another, With a crowbar and a spade. "Here's another stiff to cover. We won't finish. I'm afraid." "Let's sit down on this cadaver, All my bones, I think, are broke." "If we can't fill up our bellies. We at least can have a smoke." "How'd you like a sup of something-Cabbage soup with cream on top? "How'd you like a sip of something?" "I'd be willing-just a drop."

"Maybe two--" Suddenly they seemed to hear Someone say, just audibly: "Drive this jade away from here! I'm alive, as you can see."

Un they jumped from off Vasili. Had a look-alive all right! "Can you beat it?" "Now we really Must get back before the night."

"Just to think of him surviving! Quite a marvel, on the whole! Not so strange to find a body. But a body with a soul!"

"Once his soul is whole-come on! Got to give the guy a band. We had almost passed him on To the Ministry of Land." "Get your spade without delaying. He is frozen to the spot. Chon his coat off . . . "

Death was saying "I will follow. Like as not They will jerk him or will drop him, And I'll have him back again. Some new accident may stop him From escaping with those men."

Both their spades and both their belts-Both their coats laid end to end-

"Come on, soldier, lift the soldier." "Off we go! Have nationce, friend," Slowly, carefully they bore him, Trying hard to ease the ride. He looked happily before him: Death kept trailing at the side.

What a road they had to cover! Ruts and rocks and drifts of snow-"Why not rest a little, brothers?" "That's all right. We'd better go. Night is coming. Don't you bother A hout us " a coldier said "You can bet we'd ten times rather Lug a live one, than a dead." And the other said: "That's right, And besides, it's understood, That a live one must keep going, While a dead one's home for good."

Now it seemed the wind was easing: Less relentless grew the storm. "Lost your gloves? Your hands are freezing. Here, take mine, they're nice and warm."

As she listened, Death kept thinking: "What a friendly lot they are!" All her hopes were quickly sinking: "There's no sense in going far, I can see they'll never let him Go away with me today. It's a pity not to get him-"

And she sighed and turned away. Translated by Margaret Wettlin 149

Dedicated to Mothers

From beginning to end it's goodbye, We say them to mothers in sequence-In our childhood you cannot deny We treated the first with nonchalance

Kind hands packed our cases for camp, While we stood at the door in a sweat That something would happen to cramp Our going, although it was set.

Then the parting "for good" came along, The one mothers dread quite the most: Of our "filial" bent right or wrong We were quick to advise them by post!

And we sent them some snapshots of who The girls were they'd not met before, So big-hearted, permitted them too Their strange new in-laws to adore.

After brides—of course grandchildren small . . .
Then a wire falls out of the blue,
You go back: the last parting of all
Between Gran, dear old Mum . . . yes, and you.





AN AXIOM THAT FAILED

Because the gas we know in English as nitragen does not support combustion or breathing, the great Frech chemist Lavoisier gave it the name "avate" (from the Greek "saos"—"lifeless") in 1787. On the assumption that it was an asphysiating agent, the Germans called introgen "Sickstoff". The English name, taken from the Latin "nitrogenium", meaning "groducer of salipetre", represents a bridge between life and death, because saltpatre (potassium nitrate) is a first-class fertiliser. With carbon, oxygen and hydrogen, nitrogen is one of the four basic elements of all living matter from anneals or manneals or manneals

The textbooks claim that most plants and animals assimilate nitrogen only in the form of compounds (in their food), and not in the free state, out of the air. Now this universally accepted view has been overturned by two Soviet scientists, Dr. Mikhail Volsky and Dr. Fyodor Turchin.



MANNA FOR PLANTS They all get nitrogen direct from the air

by Yulian MEDVEDYEV

*

condensed from the mogozine "The entire history of Western European agriculture reveals that the principal condition determining average crop yield in different epochs has been the extent to which the crops have been provided with nitrogen."

That assessment of the role of this vital substance was given by Dmitririous Tricultural chemist. Another Soviet as exception to the third this chemist. Another Soviet scientist in this field, Dr. Fyodor Turchin, conducted some highly original research which opened up prospects of dispensing with nitrogenous fertilisers and thus saving tremendous expense and effort.

So far, however, the idea remains in the realm of semi-fantasy. Cultivated fields throughout the world are fertilised with nitrogenous substances, either mineral or organic.

Fronter Transitive,
who recolored when the processing of the proce

plants are capable of taking nitrogen from the air was like a bombshell when it appeared in *Proceedings of* the USSR Acodemy of Sciences. It was the nineteenth-century French chemist and aeronomist

because it is believed that all plants

except legumes are incapable of assi-

milating gaseous nitrogen from the

sir. Dr Turchin also believed this, and

did not suspect that one day he

would explode some of his own

His published results of investiga

scientific convictions

Jean-Baptise Boussingault who, noticing in Peru that the sun-secreted, and soil yelded rich maize crops, exablished that nitrogen was needed as a soil fertilise. The fertility of the Peruvian soil, he found, came from the application of only small amounts of bird droppings, called "guano", which was gathered and spread by the farmers, Guano was found to be almost nure saftrette.

found to be almost pure saltpetre. Experiments led Boussingualt to conclude that it was the soil alone that fed plants with nitrogen, but a German chemist. Justus Lébèig, voiced dissent, claiming that plants also extracted nitrogen from the air properties. Neverthelers, he called on farmers to feed only phosphorus and potassium to their fields, explaining that think the properties of the properties of the properties. Neverthelers, he called on farmers to feed only phosphorus and potassium to their fields, explaining that nitrogen could easily be obtained from the air, which had an abundance of it.

His recipe, alas, was a failure. Crop yields did not increase, and the farmers felt they had been deceived; so much so that they began to call Lebing 'Big Lie'l' If only the chemist had known that his rejected idea would germinate a century later long after his death—and in Russia, at

Boussingault himself was not quite satisfied, although the had won the dispute. It was the behaviour of legu minous plants such as peas, although and colorer that made him feel unexp. If the sol was the only source of nitrogen, he reasoned, why was inthe the solid premained as rich as ever in nitrogen, or even been riched? Perhaps Liebig was right in some way?

as a result of a discovery made at the close of the nineteenth century. It appeared that multitudes of bacteria nestle in the root nodules of leguminous plants, assimilate mitrogen straight from the air, and pass it on to the plants. But legumes were an exception to the rule—most plants, it was found, consumed only so introgen, as Boussingault had

Everythine began to fall into place

claimed.

These conclusions, of course, were made more specific later, but basical-

ly they remained unchallenged.
Then a sceptic decided to test what
was universally thought to be a truth.
Recalling the Boussingault-Liebig
dispute, Dr. Turchin sought the aid
of nuclear obvsics.

In the pre-nuclear age, research

workers had no means of distinguishing absorption of atmospheric nitrogen and soil nitrogen by nlante

In experiments supervised by Dr. Turchin at Dolgoprudnava, near Moscow, atmospheric nitrogen fed to a plant was "tagged" with radioactive isotopes. Within ten minutes it had penetrated the plant's cell sap. and at the same time no nitrogen was detected either in the nodule bacteria or in the root tissue. It simply could not have penetrated there within ten minutes. That meant it had been assimilated without the beln of nodule bacteria and the root

Many experiments have revealed that leguminous plants are, in fact, capable of taking in nitrogen direct from the atmosphere without help from the root. The "lifeless" gas is absorbed by stems and leaves, in which enzymes-the catalysts of biological processes-immediately subject the nitrogen to chemical changes, making it part of the tissue cubetances

What amazed scientists still more was the discovery of similar catalysts in the tissues of non-leguminous plants, including wheat and other cornale

Dr Turchin has confirmed Liebie's surmise. Now the question is: what about Liebig's practical advice to farmers?

The fascinating prospect now opening up is that sooner or later formers will be able to give up using nitrogenous fertilisers, millions of tons of which are produced annually. Of course no one is foolbardy

enough to predict when that may become possible, or to venture to give practical advice as to what should be done instead, as Liebig did in his day. For one thing, the nitrogen absorbed by a plant from the air is insufficient for it. However, the way to achieve the aim has been

charted

Very likely, stimulants will be found, which, when introduced in small amounts into the soil, will activate the enzymes forming a chemical link between the atmospheric nitrogen and the plant, without the aid of bacteria.

An alternative is the artificial development of supplementary nitroeen-fixing substances to be introduced, also through the soil, into the plant tissue. Attempts to synthesise such substances are already under way at the Institute of Natural Compounds of the USSR Academy of Sciences.

Complete abandonment nitrogenous fertilisers is the longrange programme. More realistic is the short-range programme for raising yields and nutritive value of crops. But whatever the practical applications of the discovery may be its theoretical importance can hardly be exaggerated; it means that biologists must revise notions which have prevailed for a whole century since Liebie's failure.

Dr. Turchin died in 1967, but his work has its disciples both in the Soviet Union and abroad, including Dr. Wilson in the USA and Dr. Burcherson in Australia, to mention only two.



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AND ANIMALS, TOO-AN OUTSTANDING DISCOVERY

by Alexander LAZERNIKOV

-X-

condensed from the newspaper SOVIETSKAYA ROSSIYA

On September 10, 1968, the Soviet Government Committee for Inventions and Discoveries registered a discovery by Dr. Mikhail Volsky. It was worded: "A hitherto unknown ability of animals and higher plants to assimilate atmospheric nitrogen needed for their normal vital functions bas been established."

It was in 1946 that Dr. Volsky first began to doubt that nitrogen, which comprises 78 per cent of the earth's atmosphere, possessed merely the passive function of diluting oxygen. It was thought that only microorganisms, and not the more complex forms of life, were capable of

main.

assimilating free nitrogen-that was an axiom. Taking the risk of being thought eccentric, Dr. Volsky de

cided to challenge the axiom. He was not a young man, and not even a biologist. He was, in fact, head of the Strength of Materials Department at the Gorky Institute of Water Transport Engineers, so he was beginning to study something entirely new to him, and, moreover, without being able to count much on support from biologists, who regarded him as an intruder in their do-

There were a few, however, who had a different approach. Dr. L. V. Polezhavey, for instance, declared firmly that in the not-so-distant future Dr. Volsky's discovery would be cited in the textbooks. He based his judgment on the results of strictly scientific experiments which Dr. Volsky carried out in 1950-51 in a special laboratory at the Lobachevsky University, Gorky.

Dr. Volsky's techniques revealed the simplicity of genius. He divided a batch of hen's eggs into two equal parts, hatching one lot in an incubator and keeping the others cold. Then he measured the amounts of nitrogen in the chicks and in the nonincubated eggs, finding that the chicks had three to ten per cent more nitrogen than the eggs.

The volk and white of a hen's egg contain everything needed for the development of the embryo. As the developing chicks received no additional food that could add the extra nitrogen, it could come only by absorption from the surrounding air

through the porous egg shells. It was thus shown that animals assimilate gaseous nitrogen, which they appar-

ently need That was proved by thousands of experiments with the east of pigeons. hens and quail, with white mice and the puppe of bees. Dr. Volsky's amazing results were confirmed at Moscow and Ufa Universities and other research centres, and the discovery drew appreciative comment from Dr. Nikolai Semyonov, a Nobel Prize winner. A report on it was published in Proceedings of the

USSR Academy of Sciences in 1959. Dr. Giovanni Costa, of the Oncology Institute, New York, carried out similar experiments, with just as sensational results, in 1962, Dr. Costa communicated his findings to the USSR Academy of Sciences and to Dr. Volsky personally.

In 1964 Dr. Volsky completed a thesis to add a doctorate in biology. to the similar degree he already held in engineering sciences.

In one of the interesting experiments conducted in developing Dr. Volsky's ideas, some animals were placed in an artificial atmosphere in which all the nitrogen was replaced by the inert was helium, which never reacts with any other chemical substance. This property makes it harmless and useless to an organism.

As a result, the animals' blood composition changed abruptly, with a drop in haemoglobin content. This showed that nitrogen was not mere ballast; nor was it a mere diluting seent of oxygen, such as might be replaced by any other. It was a

biologically active component of the otmosphere.

terest for biologists, specifically for those striving to ensure normal life processes for astronauts and explorers of the ocean floor.

In an interview with a Pravda reporter, Dr. Vladimir Stoletov. Minister for Higher and Specialised Secondary Education of the USSR. and himself a biologist, said that Dr. Volsky's experiments had yielded unexpected results, and the explanation eiven them had been even more un expected. At first few scientists found themselves able to agree with Dr. Volsky's assumption, but further experiments invariably supported the bold hypothesis. In this way an outstanding discovery had been made.

Dr. Stoletov said he assumed that the most important direction of research arising from the discovery was likely to be research into the biological mechanism of assimilation by living organisms of the molecular nitrogen of the atmosphere. On this score the discoverer had

suggested a series of hypotheses resting on a wide range of scientific data concerning the properties of blood and chlorophyll*, the action of atmosoheric ions on plants and animals, the part micro-elements play in vital processes, and the role of the "micro-nonulation"-microbes and viruses-in bieber animals and plants. Each of Dr. Volsky's hy-

potheses needed thorough testing. For a long time, after he had begun the work that led to this discovery. Dr. Volsky had been putting all his personal savings into the experiments. This selfless effort had been marked and readily supported. so that today Dr. Volsky was the head of a rather good laboratory

Dr. Stoletov said the Ministry intended to improve conditions of work by providing the laboratory with additional equipment, and by expandine its staff and training facilities.

plants. It is also the agent that "disests" the



LACK OF THE LINGO MEANS ... DEATH!

- from the magazine MOSKVA

"Beware!" she screeched.

as they sound.

But the foolish little coypu sat without a care on the shore of the lake, washing itself and paying not the slightest attention to the frantic warnings of the magpie. This cost the

little South American animal its life.

"And I realised then," the hunter said, "that the coypu did not under-

stand Russian."

* * *

More than once, walking in a forest, you must have unconsciously slowed your steps to listen to the twitterings and chattering of birds. Yet you probably never stopped to think that all those arias and oboruses might not be as carefree and aimless.

Birds send signals of alarm and warnings to the inhabitants of the forest. A man is coming! And immediately every living creature

immediately every living creature takes precautionary measures. This is one of the manifestations of "biosoenosis", co-existence, the

mutual aid" existing in the forest.

In the 1930s more than a thousand large coppu—an aquatic rodent something like a beaver or otter, whose fur makes fine nutria coats—were imported in to the Soviet Union from South America. In their natural environment they live in tropical

lakes and lagoons overgrown with thick vegetation, on which they feed. It proved extremely difficult to acclimatise these valuable fur-

It proved extremely difficult to acclimatise these valuable furbearing rodents to the southern districts of our country.

The covers's major enemies include

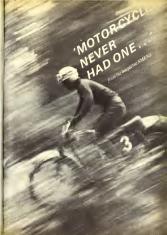
and the coypu's major enemies include jackals, wolves and wildcats. Soon they were destroying the little immigrants in wholesale fashion. This posed a difficult problem; one which has yet to be solved.

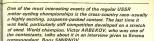
Wild beasts preyed on the coypu in South America too, but there they survived. Why were they so defencelare here?

A hunter discovered the answer one day when he chanced to come across a jackal stalking a coypu. The jackal approached with great stealth and caution, but was spotted by a magpie, which immediately began hysterically to screech and chatter here warnings. The course hadd

her warnings. The coypu paid no attention, and was soon caught. The hunter concluded that the coypu didn't understand the "Russiam" language of our feathered

friends, because they have different species of birds in South America. On the other hand, animals that have been imported from North America react quackly to the "danger signals" of our birds, because the same species of birds live in the foreast of the United States and Canada.







Smirrow: I understand it was a gruelling contest. What can you tell us about it?

Arbekov: To begin with, I was only the runner-up on that sandy stretch. Afterwards, when the judges added up the overall points, I was one again national title-holder in the 250cc. motor-cycle class. But I certainly did not shine on that strip.

It runs along the very edge of the

Caspian Sea near Sungait, at the base of the Apsheron Peninsula north-west of Baku. Such stretches of sand often form part of the course in international contests, and that was why this course was chosen for the national championship. Racing across send is a very tough proposition in general.

After the first lap, the course is full of pot-hotes, and your wheels sink when you attempt a curve. You have to use special techniques, such as straightening up your back as often as you can, and riding the back wheel with the front one clear off the ground. Your arms, kgs and back get cramped from the great physical strain. A racer has to be in excellent shape to compete on sand. What actually happened to you on that stretch? In the morning before the race

we all took a walk along the course. Everyone ran the race over in his mind and made tactical plans. Although the course was the same for everyone, each of us chose his own invisible track. You take ten racers and have them

You take ten racers and have them make the same curve: each one will do it differently.

At one place along the Sumgait sands I spotted three bumps in a row, like a wave. I decided I'd take them in one long jump. As it happened, I miscalculated and tumbled on the third bump. I lost seconds picking up myself and the machine, and getting going again.

As a result I came in second.

Well, that's part of a race—you think out something, try it, and sometimes you fail. There's no real competition without that.

World motor-cycling championship, Moscow, 1965 What does a racer feel during a

contest? I can tell you about myself. I get very tense just before the start. For me it's the tensest moment. It's been like that for years, and it

happens each time I do not feel myself--- I become gloomy and unsociable. But the moment the starter raises his flag and the race gets under way, all tension goes.

I always try to get out of the cloud of dust and exhaust fumes at once, and lead the race. In the lead you get the course fresh and unspoilt. You can choose and use your tactics freely. And winning a race is largely a matter of tactics

and ability to apply them. In a cross-country race the average speed is none too great. On the Sumgait sands it was about 26 m.n.h But the course itself was very slippery, and tough all round.

Frankly, I don't like racing on sand. I know it's upavoidable and even does a racer some good, especially at the beginning of the season when he wants to get back in sbape. I suppose I just don't like sand-that is. I don't like it in my teeth, under my goggles and in my

If you follow someone, you get sand-sprayed from head to toe. Yet I wouldn't rejoice if races on sand were for some reason abolished.

gloves.

How did you come to be a racer? Motor-cycling is very popular where I come from-the town of Podolsk, near Moscow, With the other boys I used to watch all the races there whenever I got the chance. I rode a motor-cycle for the first time when I was nine-a neighbour of ours let me have a go on his. When I was 14 I began training at the local motor club under coach Yuri

Komprov When I was called up for military service. I continued training at the Army Central Sports Club, and was in the club's racing ream. Later I was included in the USSR national team.

Some people believe motor-cycling to be a dangerous sport. Do you agree?

Not at all. Sometimes racers have falls. But serious injuries are very rare. Ability to take great risks is not the best of assets in a racer. It's pre-calculation and precision

When did you last have an injury? Let's see. It was last autumn, I sprained an ankle playing football. Do you drive a motor-cycle outside training sessions and

contests? No. I don't. In fact. I never owned a motor-cycle in my life. The reason is that I don't like riding one in city traffic. Still less do I approve o motor-cyclists who try racing city transport. The way I look at it, i you like speed, so in for motor-racing as a sport. It's safer and you'll get more satisfaction out of it

champion? I lead a quiet life. Very few people know I'm a racer, and if the subject of sport comes up I always talk about draughts



BEACONS WILL NOT FAIL YOU

by Yuri POPOV and Victor SMIRNOV from the magazine ISKATEL (Socker)

The fighter zooms skywards.

Suddenly something goes wrong and the plane gets out of control. The clouds, flat and tranquil beneath the wings a moment before, emerge

aslant on the right. The plane goes into a nose dive. Ivan Kunitsyo, the pilot, tries to regain control of his rebellious machine. "Steady," he says to

self. "Steady," he says to self. "Steady. Watch the instrument panel." Now pull back the stick to stop

stalling. There's a response.

He feels a sharp jolt. His vision is
blurred, his back seems to be gripped

to a vice, his back seems to be gripped in a vice, his body is like lead.

The fighter climbs steeply. The engine is giving everything it's got. But gradually there is a slackening in

speed. So far, the plane is still rising, but in a moment—it will go into a spin, shooting earthwards like lightning. In seconds, the ejector seat will be useless. But he'll try to save the machine.

Stalling must be stopped somebow; he mustn't go into a spin again. But it is futile. The earth rises to meet him. "Bale out!" comes the order from the command post.

The instruments register spin. The clouds heave and whirl. Altitude is 9,000 metres; a hundred-metre drop, another, still another.... Low altitudes are no good for ejector seats. Five or six seconds

cjector seats. Five or six seconds more, then it will be too late. He radios to the command post

and catapults out. In a few minutes a search plane takes off, flying low over the sea.

After a while a helicopter takes

Meanwhile Kunitsyn splashes down, plunging in head-first, but bobs up like a cork in his Mae West. The inflatable dinghy dances on the waves, safely fastned to his belt. He wonders when he could have pulled the string to release the compressed air into it.

Adrift in his wash-tub

He stendies the boat with his chin, clutches the straps and heaves himself in with a quick movement. Fur-lined jacket, warm trousers, boots, tunic, wooilen underwear are all soaked. Water has even penetrated his flying helmet.

He crouches in his dinghy. What a boat! Just a wash-tub. No room to stretch his legs. The bloated orange sides rise only slightly above the surface. It is a refuge, though. Not exactly a spacious residence with all

mod. con., but a refuge all the same. Where's the parachute? It should stay afloat for several minutes. There in the knapsack fixed to it are night and day flares, a pistol to shoot them, waterproof matches, electric torches, first-aid kit, chocolate.

The waves are smallish, whitecapped. The sky is overcast; it is

drizzling unpleasantly.

No sign of the parachute. Has it sunk? Or have the waves and the wind borne it off into the gloom?

I Ivan rows with his hands, helped by the wind. A minute passes, another. . . . Ivan peers into the darkness, searching for the bright orange of his

chute. No luck.

It must have sunk. So the knapsack's gone, too. All right, give it up

as a bad job. He'll get by without the chocolate and the first-aid kit. But he could have done with the flares and the matches.

The waves toss the boat from side

to side, obeying their own laws. Suddenly a big wave appears, marshals its forces, slaps the side of the boat and sweeps in. Kunitsyn is waistdeep in water.

deep in water.

He bas a sudden sense of being chilled to the marrow.

Kunitsyn bails water out with his hands. He gets rid of half of it and turns round to settle himself more comfortably. The boat dips slightly and another wave rushes in. He is drenched and shivering. His

hands are red with water and wind. His gloves have gone. Remember, keep on the move until belo comes, Not a second's respite.

His Mae West is tight against his chest, hampering movement. Numb fingers struggle with the clasps. The straps are water-swollen. At last he gets it off and puts it on the side of the boat. No room for it inside. Night closes in.

Night closes in.

He slaps himself across the face.

Once, Twice. His cheek feels pain,
but his palm doesn't seem to belone

to him. It is numb, wooden.
Drowsiness overpowers him. The
waves and wind subside, the sea is
not so noisy. It is pitch dark. No
stars, no lights shining out over the
water. What hopes of being found
But he's confident they're looking for
him. "Stick it out for just one night."

Life-jacket gone The ear gets accustomed to the murmur of waves, accepts it as

he repeats to himself.

silence. A silence that is broken by a faint splasb. A fisb, perhaps. He flumbles around the side. The Mae West has gonel He's wide awake. If anything happens to the boat, that life-jacket is his only bope. He rows around in circles, groping

He rows around in circles, groping unavailingly for the life-jacket. Oh well, the boat is safe and he can move on. The endless hours of

the night are still ahead.

He must row and row—as long as
he has a drop of warm blood left in

The worst thing of all is not to know. Not to know whether the shore is ahead, or the open sea. Or if the wind has changed. Or if he is simply movine in circles

A twinkling star appears, low over the waves. It's ahead of him and a little to the left, a pencil of light.

A beacon! No doubt about it.

The shore must be near. He rows steadily, trying got to give way to overwhelming joy. Now that safety is within reach, he must take his time, think out each move. husband his strength so that it will

not fail him balfway. The tide and the waves gradually carry the boat to the shore. There are rocks everywhere; by some miracle they have not yet slit the rubber. A few more bobs on the waves, and the side of the boat is rubbing against rock. His palm touches steep granite.

polished smooth by the sea. It must be the steepest point on the shore of what seems to be a desert island.

Ivan pushes the boat clear of the wall of rock and begins to row. But the powerful tide tosses it back towards the wet, mossy rock.

In his impatience he breaks an iron rule well known to seamen: never stand in on the windward side He yields to the temptation, anxious for warmth. And now the island, his only hope, has become a trap,

The boat rubs its rounded sides against the rocks. The rubber can't last for more than 20 minutes, and then the boat will collapse. The sea is deen here. The rock is almost sheer

"Let's have another go," he mutters, "The last one," Somehow he pushes himself clear of the island. The host moves back out to see Twice it capsizes; his hands are bleeding, burt against the rocks; now it's fortunate that they no longer feel pain.

Kunitsvn rows for a calmish spot

where the murmur of waves is faint The boat runs aground. He leans out and runs his hands under the bottom.

and feels smooth pebbles. There's no doubt that he's in the shallows He is reluctant to part with the boat. He shoulders it and crawls up towards the beacon, which is like a

mushroom. The light irritates his eyes, accustomed to darkness. The mushroom is not tall, nine feet or so. First, a fire

Ivan drops the boat. He is tired out, and he so wants to lie down on this firm, safe ground and doze off, if only for a moment. The dawn is not

far off now. He clutches at the beacon and rises to his feet. His legs support him, surprisingly.

He takes a sten. His less move, his feet are heavy and flat, as though encased in the lead shoes of a diver.

Another sten · Now he'll build a fire take off his things, dry them, warm up his shivering body.

Kunitsyn crawls around the firmly embedded tower, gathering chips of wood. Lying around are bent strips off

herring barrels. They are damp, But that's no trouble for a good fisherman and hunter. There have been times when he has lit a fire in the rain with just one match. He shaves away at the wood with his knife and meticulously builds a fire. Now he wants a small, hot toneme

of flame to ignite the wood. When the fire is his enough, he will throw in

the dampest chips. The smoke will despair, Without a fire he is lost, serve as a signal.

He goes inside the beacon, a small one. An acetylene burner protected by convex lenses hangs overhead. flashing every three seconds. It is possible to reach the burner by clutching at some metalwork and pulling himself up. But the burner is protected by an iron hood. There is a

eatch on the hood, secured with bolt The nut must be knocked off, Here in a closed space he distinctly hears his hoarse, gasping breath, It's convulsive-lack of oxygen, perhaps, He knocks the nut on the head

with his pistol butt. Again and again, It does not vield: it is rusty; the humid, salt air here is ruinous. Kunitsyn is exhausted and dizzy.

He sline and sinks on to the coment floor

He is very thirsty..... Again he tries to knock off the

nut: he hammers at it steadily, like on automaton and the metal fails at lone last. The hood is thrown back. The

flame is unprotected. He reaches for it, pencil in hand. The flame burns his fingers. At last! What sweet pain! The pencil merely smoulders. He him must keep it in the flame a bit longer. It wouldn't be a bad idea to press the

apart, to make more room for the ly, flame. He believes he is being very care-

A swollen finger touches the flame. It goes out with a splutter. Ivan collapses on to the floor in

But he has forgotten about his nistol. The flash alone will not light a fire; but primed with acetylene

maybe it can Isn't that a way out? Hope springs again. But how many car-

tridges are there? The cartridge clip will not spring from the battered, disfigured butt. He keens pulling the lock. Four cartridges lie on the floor.

He pockets one of them. That's for an emergency. The last bullet, All for a flame

The acetylene is still spitting forth in the beacon. He must fire blank cartridges to get more flame to spout from the barrel of his pistol. His clumsy fingers fail to grip the

slippery bullet. Then he draws the bullet out with his teeth. He steadies his trembling

hand-not to spill the powder out of the cartridge case. This is a really hard job. Breathing is difficult. He leans against the wall

and takes a minute's rest. One minute is too little, but it's enough to let drowsiness creep in and envelop The gun muzzle is all but pressed

against the porcelain tips of the burnporcelain tips of the burner slightly er: the eas issues forth, bissing faint-

> Smoke rises. The gas does not ignite. Fire!

Fire!! That's all.

The roar of an approaching engine jolts him out of his tornor. There is no mistake. The sound is so distinct through the fog that he can even tell the type of engine: it is the kind of diesel they used to install in army tanks. There is a launch nearby, it seens. It will emerge into view in an instant, going full speed, then back

Ivan struggles to his feet-it is

painful The best of the diesel trails off for quite a time and dies away. Fate has decided to tease him once again. He lies prostrate on the brink of the cliff. near the extinguished beacon

He cannot force himself to get up. He cannot even raise his head, Drowsiness overcomes him Ivan wakes with a start and his

body is racked with convulsions, the kind of spasms, it seems, that presage the onset of death.

A nasty death No! He'll fire that bullet first. He fumbles in his pocket for the last

cartridge No use He can't last out

Last message . . .

The cold is killing him. If he falls asleep he'll never rise again. With the charred pencil stump he manages to scrawl on the door of the beacon; "Ivan Kunitsyn, Air Force pilot, Can't last till help comes. Cold killing me. Take care of my. . . . " He can hardly make out what he has

written. It is very difficult to start to live all over again. To force oneself to get up, feeling agonising pain in every cell. Kunitsyn rises, falls, rises again, He clambers up to the burner somehow. The last cartridge, the last car-

tridge....

Now move closer; you can't afford to miss. Perhaps the acetylene will blaze this time. Fire! It's futile. . . Now, walk! Don't crawl. Your

legs don't support you. Force them Walk! Walk like a man. Sing a song. But your lips are frozen.

Now, sit down and try to get fire by friction, like the cavemen Rub two pieces of wood together. A man who dreamed of becoming

an astronaut is trying to obtain fire by friction. It's no use. And it will be dark

again in an hour. He throws away the pieces of wood Twilight is falling. The sky is hazy

and gloomy. The night will be endless. Seventeen hours of darkness. He won't live through a night on the island. He'll fall asleep, and that will be that

He'll have to start rowing again. Set out in the night sea, abandon the island which gave him shelter, the dry land beneath his feet, entrust his life to that frail craft. No alternative He can't sleep in the boat. And he's got through one night-he'll manage

another. He'll make ours. He has a knife; there is timber on the island; he will work, and the cold will not defeat him

His clothes freeze; he cannot dry them against his body because it has lost its warmth. All he can do is work, work without stopping. He crawls to the water's edge and remembers that he has foreotten to wine out what he has written on the

door of the beacon. He is in the boat again, paddling sway. Water is dripping from his

flying belimet, blurring the view, He runs his palm over his face. The oars are a great help. He'll move quicker now. He leaves the

island behind. The beacon is still visible, but he won't look at it in the gathering gloom. The boat is full of icy water. He does not even try to bail it out: no use.

through the stomach. He drops the oars into the boat, takes out the knife, opens it with his teeth and cuts off a bit of his waistbelt. Then he tries to chew it.

It is as good as chewing stone Darkness and fog. The boat seems to be pressing against a dense wall which yields under pressure and retreats step by step.

He fancies that all the space around him for countless miles is filled with this amorphous mass, that there is no shore anywhere and he is alone in the world. On the island there was something definite. Solid ground. A sense of

security. Why not return?

But it's as hard to find the island as the shore. No, he won't so back. From time to time Kunitsvn stretches his legs. They are still function-

ing. He has been fully conscious again from the moment he fired that last shot inside the beacon. He must try to fight drowsiness and keep a clear

mind however hard, whatever the cost .The main thing is not to get the

miseries Suddenly he has cramp in the back. He keeps his knife open on his knees, to prick himself if the cramp

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does not ston. Night drags on, endless, Shins silently appear and disappear.

Is he dreaming? The sound of an engine overhead. A flying boat? But there are no flying

hoats in his outfit. The neighbours, perhaps. There is a sharp pain shooting Half an hour later he hears a heliconter humming overhead. The sky is alive with sound. The search is going on.

He must take care of his legs. . . . His bands, blue and swollen, are still alive.

The thought of herring

An eider duck floats by, with a berring in its beak. Instinctively be draws out the pistol. The herring is big and fat and silvery.

The eider duck floats by, almost within reach, ignoring the boat. The shore or an island must be nearby. The eider duck definitely knows where to go. He must deviate a little to the left in its wake.

The thought of berring tortures him for a lone time. Towards evening it grows cold. A bright star appears in the west. Clouds and fog lift. A plane with multicoloured lights passes overhead.

A bright spot shoots sky-high on the horizon and disappears. It must be a flare. Is it real or a mirage?

A light pulsates in the dark. A away from this dead island! beacon.

It must be the shore or another island

Kunitsyn stops rowing and tries to stretch his less. The body below the waist is numb, as if paratysed. There is a growing pain in his chest, as though somebody were ruthlessly squeezing his ribs, not allowing him to breathe. The back of

his head aches. He is shivering all over. He clenches his teeth, so that he won't hear them chatter. His legs no longer feel pain. The island is drawing near. But he won't be able to step ashore, because his

Try to stretch the left one first. Make your les obey you hy sheer willpower.

legs won't carry him.

Now use your hands, as hard as you can!

Watch the baseon

His feeble hands cannot rumple the thick, soaked trousers which envelop his legs like cold armour; he does not give up, but rubs his legs again and again. Pain makes itself felt. Feeling re-

turns. Now he can afford to rest a bit, to save energy for getting ashore. Kunitsyn lies in the boat as if in a cradle. The waves push him, shake him. He won't give way to drowsiness; he'll watch the heacon.

Kunitsvn rises in despair. The beacon has gone out. Now that the hoat is so close to the shore, he can even hear the surf. Two nights and a day have been wasted. Let's get

Suddenly the light comes on again. One, two-darkness, Kunitsyn counts in a hourse voice. He does not believe his eyes. Three-light: four. five-darkness: six-light. The

beacon is working! Ivan begins to laugh, hoarsely,

sobbine The beacon never once stonged beaming; it simply hid behind a cliff when the hoat approached the island. Never say die. The laughter

cheered him up. This time he can't afford to repeat the former mistake and pull in anywhere, frantically. He makes up his mind to reconnoitre the island first.

to select a suitable place for going The island looks like a horse-shoe: a small convenient bay cuts inland. The boat heads for the hav, dodging

snags. He is lucky. It is high tide, and the waves carry the boat closer to the

Ivan clutches at the hare, sharp hranches of a tree washed ashore, pulls himself up and hauls his weary body ashore. Then he pulls the boat out of the

shore.

water. The rubher at the sides is worn thin. Had the island been a few miles farther off, he would never have reached it. He tues the boat ashore carefully, giving sharp rocks a wide berth

Rocks beyond the surf-line are not so slippery, and it is easier to crawl there.

The left leg begins to help him. pushing the body on; it is alive and not frosthitten. But he can't move the right one, on which he has been

sitting all the time He can now lean against a boulder and take off the boot. His fingers

struggle with the knot. He cuts the lace and feels a sharp pain in his leg.

"Help!" he shouts "Help!" No answer. The shore is littered with dead twies, planks, boards

Kunitsyn crawls along the shore. looking for sticks that could be made into crutches. At last he finds a couple that will do. He shortens one of them with the knife

Resting heavily on the crutches, Ivan walks uphill towards the lighthouse.

It is some 50 yards off. Each sten causes him sharp pain. Now and then he falls, the slope is so steen The hurner, the bood, the convex lenses and the tongue of eternal flame

are the same

This time Kunitsyn takes extra precautions.

Burning his comb

He gathers moss, grass, the driest, most resinous chins and makes a small heap. He leaves nothing to chance. A single spark will set it aflame.

The lighthouse shields it against the wind. Out of his pockets comes anything that will hurn; a comb, a fountain pen. The ruhber tube of his mouthniece will do, too.

This time the hood opens easily. He touches the glass, Flash! Ivan instinctively jerks back for fear that the light may go out at the touch.

He lifts the hood and shields the light with his jacket to protect it from the wind. Then he brings the comb

closer to the hurner. It catches fire at once and burns out in two seconds. Too had,

Kunitsyn sets fire to the tube of his mouthpiece. White tongues of harely visible flame lick alone it. Forgetting his crutches he stens outside, bends low, almost falls, and inserts the hurning tube beneath the beap of grass.

Invisible presence After so many hours adrift in the

rough sea, his nerves are on edge. His eyes are closed, but he is aware of an invisible presence. Any strange sound makes his heart best violently Has something happened to the fire?

No, the fire is all right.

Something elongated comes into view. A launch! A deckhouse a short mast. A launch coming into shore.

Ivan jumps to his feet, waving to the launch.

They can't fail to see him. The launch manoeuvres, grows higger, heads straight for the island.

He sees people on deck But it does not null in. It is moving away!

Ivan throws his crutch into the air. Aboard the launch people shout something, wave their hands, it seems; but the launch recedes into

It must be a mirage, a wild flight of fancy. The launch will dissolve in

the distance.

the sea the way the night ships did! Ivan throws into the fire anything that comes to hand; damp boards. chinnings, his crutch. . . .

A message is radioed: "Kunitsvn found. He is alive."

A helicopter approaches the island to pick Kunitsyn up and take him to

A few days later the newspapers published a Decree of the Presidium of the USSR Supreme Soviet saving: "Pilot-captain Kunitsyn L.T. is awarded the Order of the Red Ronner for outstanding valour, fortitude and presence of mind in an omer-

gency.... Ivan Kunitsyn spent a considerable time in hospital. On recuperating he began to fly

again, despite all the doubts of the

doctors.

THOUGHTS OF LEO TOLSTOY

- · A man must always be joyful. When joy goes, seek your mistake. · What is great and sincere is always simple
- and modest.
- · Genuine wisdom is sparing of words.
- Brevity, like a pearl, is radiant with intrinsic worth.
- It is a quality of love that it brings good to those who experience it.

THE SAUCE MAKES ALL THE DIFFERENCE

The first nine of the sauces we give here are purely Russian. The others may perhaps seem familiar to you, for the majority of Russian sauces are of French origin, having come here from France about two centuries ago at the time of Catherine II, a great admirer of all things French. Some of the sauces of that time are still made from the original French recipes, while others have been adapted by the authors of cookery books to suit Russian tastes and possibilities.

In most cases, the dish with which the sauce is served is stated. This has not been done with the horseradish sauces, for in Russia, horseradish is served with a wide variety of dishes, including boiled, roast and fried beef, roast and fried mutton. and any kind of fish.

Hot Horseradish Sauce breakfast cup grated horseradish

¹ bkfst cup sour cream 2 volks of egg

¹ tap lemon suice 1 tsp salt

Beat up volks, add sour cream, stir well and mix with the horseradish. Heat on a low gas for five minutes, stirring constantly so that the sauce thickens slightly. Remove from gas, add lemon juice, salt and sugar. Serve hot.

Cold Horseradish Sauce

- bkfst oup grated horseradish

horseradish, salt, and sugar. Serve cold.

- 14 bkfst cup sour cream
- Soak breadcrumbs in vinegar, add sour cream and beat well. Then add

Iced Horsersdish Sauce

bkfst cup grated horsesdist

- Combine mayonnaise and sour cream, add horseradish, vinegar, salt and sugar, and mix well. Leave to stand in freezing compartment of refrigerator for six hours before serving.

Spiced Sprat Sauce for Potato Salad or Cold Boiled Fish

- 8 medium-sized spiced spirits for anchovest
- hard-boiled egg volks
- the olive of 2 the vinegar
- 1 tap super pepper to taste Clean sprats, mince, add egg volks and mix to a paste. Add pepper, then pour in oil in a thin trickle. Mix to a thick paste consistency. Sprinkle with
- sugar and leave to stand for 15 minutes. Add vinegar.
- Hot Sprat Sauce for Fish 8 spiced sprats (or anchovies)

- agg volks
- Chop onion finely and mince sprats. Fry both slightly in oil, then add cream, stock, pepper and bring to the boil. Allow to cool a little, then add beaten egg volks. Heat on a low gas until the sauce thickens slightly. Serve hot

Walnut Sauce for Fried Fish

- 2 lb shelled walnuts
- 2 hard-boiled egg volks 2 the saled oil 1 tap augas
 - 1 the breadcrumbs 1 the sharp mustard (already mound)
- 4 bkfst cup vinegar Mince nuts or pound in a mortar, Gradually add water and salt and mix well.
- Grate egg volks and add oil to them in a thin trickle, stirring constantly, Then add sugar, breadcrumbs and mustard, mix with the minced nuts add vinegar and mix well.
- This sauce is usually spread on fried fish, and is rarely served senarately.

Tomato Sauce for Meat

Chicken or Fish

- 3 the tomato paste 14 ths flour 1 the alive oil 2 hkfst cups meat stock
- 3 the sour presm 1 egg volk
- pepper to taste Fry flour in oil until brown, Add tomato paste and fry for 12 minutes. Now
- add stock, bring to the boil and gradually pour in sour cream, stirring vigorously. Bring to the boil again, add salt, beaten egg yolk and a pinch of pepper, If the tomato paste is not sharp enough, add a few drops of lemon juice.

Tomato Sauce for Fried or Roast Meat

- hivet our temate numbe hirfes our mass stock

- salt to taste
- Peel parsley root and onion, cut up and fry in 1 ths butter and the flour. Add tomato purée, mix well, then add meat stock, stir and cook on a low gas for 8-10 minutes.
- After this, add tomato sauce and 1 ths butter. Salt to taste and mix to a smooth consistency. Sieve,

Sour Cream Sauce for Fried or Roast Game

blifst cup sour cream

1 tos nour 1) tos butter 1 bkfst cup meat stock

asit to taste
Melt I this butter in saucepan, sprinkle in flour, and fry lightly. Add stock
gradually, stirring, then sour cream. Cook on a low gas for 5-10 minutes
Then add salt and 4 this butter, and mix well.

Vinaigrette Sauce for Cold Fish or Pork

1 egg 2 tbs vegetable oil

2 the vegetable oil 2-3 the vinegar 1 the capers

fresh ndge oucumber onion the choosed parsley

this chopped parties
this tarragon leaves
to sugar
all and peoper to taste

Put hard-boiled yolk of egg through a sieve, and mix in a china bowl with salt, pepper and butter. Mix in vinegar and add finely chopped egg white, onion, capers, parsley, tarragon and cucumber. Mix again.

Fruit and Berry Sauce for Fried or Roast Game or Goose

tsp made-up musterd tbs port

this femon and orange peel small onion

pepper to taste

Thoroughly mix jam and mustard, add port, lemon and orange juice and put the mixture through a sieve. Cut lemon and orange peel into thin strips and leave in boiling water for one minute. Do the same with chopped onion, cool both peel and onion, mix into sauce and add pepper.

Mushroom Sauce for Baked Vegetable Pie

2 oz dried mushro: 1 tbs flour 1 omen

2 the butter self to taste

wash mushrooms in warm water and leave to soak for 2-3 hours in 3 cups of cold water. Then boil mushrooms in the same water, without salt.

Melt 1 the butter in frying pan, sprinkle in flour, and fry until solden brown.

Stir in 2 cups mushroom stock. Cook on a low gas for 15-20 minutes.

Fry finely chopped onion in remaining butter, add chopped boiled mushrooms and fry a little more. Add mixture to sauce, salt and bring to the boil.

RUSSIAN FOR YOU

Урок четвертый Lesson Four



дов прискал в москову из лондона для того, чтобы усовершенствоваться в русском языке. В скором времени он познакомился с Евгением, преподавателем английского языка в средней школе.

Однажды Джон и Евгений пошли в московский зоопарк. Естественно, что после этого речь зашла о животных. — Тебе никогда не приходила в голову мысль о том,

что люди очень часто — и несправедливо — переносят свои недостатки на животных? — спросил Джон.

 Бедные животные, — рассмеялся Евгений. — Во всём виноваты баснописцы, начиная с Эзопа.

 Послушай, Евгений, — сказал Джон, — ты бы не смог рассказать мне о некоторых наиболее употребительных в русском языке выражениях, связанных с животными?
 Это было бы для меня и интересно, и подезно.

- С удовольствием, Джон, но только с условием, что ты потом расскажещь мне об английских выражениях.
 - Договорились! сказал Лжон. Ну. начинай.
- Ладно. Начну с того, что мы переносим на всех животных ощу из самых непіривтных человечских черт, когда говорим о ком-то, что «в нём проснудка зверь»). Затем, мы говорим, что человек «косодала», обяжав тем самым меляедя, что такав-то жепщина «толетая, как корова»). В обием, рестабется многим животным. Например, мы говорым о том, что человек: «ершится»³, «петушится»³), «соловет»³, «проливает крокодиловы сейзы».
- Последнее выражение звучит почти точно так же по-английски, — заметил Джон.
 Ну, это понятно. Ведь в России нет крокодилов.
- поэтому все те выражения, которые касаются несуществующих у нас животных — импортированы. — Ну, продолжай, это всё очень интересно, — сказал
- пу, продолжан, это все очень интересно, сказал Джон.
- Человек у нас «врёт, как сивый мерин»³), «играет с другими в кошки-мышки»³, «пейет, как лошадь»³), «напивается, как свинья». Он «труслив, как заяць, «квамается, как уж», у него «лисьи повадки»¹⁰), он «прилипает как пиявка». Но это далеко не всё.
- Прости, что я тебя перебиваю, но я хотел бы знать, бывает ли так, что название животного у вас звучит как ругательство?
- Еще бы! Вот тобе песколько приморов: шакал, шида, сесёл, верблюд, жаба, виднок, баран, паук, свыныя, змеж. Худосочијую и злую желицину называют выдрой, толстого, красисальнего мужингу боромом. Если человес смотрит спросить: что ты јуставился, как баран на новые ворога? Об очеја. Глупом человес говорят, что у него «журнике мотит». Если хочець объедить свой плохой поступок тем, мотить. Если хочець объедить свой плохой поступок тем, мотить. Во правот в предоставляют по пре

- Да, животным по-русски достаётся не меньше, чем по-английски, — сказал Джон. — Но скажи вот что: есть ли у вас хвалебные выражения, в которых упоминаются звери?
- Етл. но, честию говоря, их меньше. Мы говорям, например, о собячей предависти, о львином сердие, орлином въгляде, кошвачей ловаюсти, грационности лани, мураванном трудолнобим. Можно скватъ, тот такой-то ноет, как соловей, что он работает, как лошадъ, плавает, как рыба. Ръбом тоже странцю достается. Например: бъйга, как рыба об жёл 17% и праба ил мосс. Если женцика честочно достается, как рыба об жёл 17% и праба ил мосс. Если женцика честочно достается по праба ил мосс. Если женцика честочно достается по праба ил мосс. Если женцика и праба и мосс. Если женцика права и мосс. Если женцика права и мосс. Ес
- столько и выражений.
 Что ж, сказал Джон, я постараюсь запомнить
- то, что ты рассказал.
 Теперь ты расскажи мне об английских выражениях,
- попросил Евгений.
 Ты знаешь, давай отложим это на другой раз: я
 опазнываю на свидание.
- опаздываю на свидание.
 Хорош гусь! 14) ответил Евгений и весьма довольный своей уместной шуткой, пожелал Джону удачи.

НЕСКОЛЬКО АНЕКЛОТОВ О ЖИВОТНЫХ

Однажды в результате авиационной катастрофы в пустыне оказался старый скрипан. Только он да его скрипка уцелели. Он шёл, шёл по пустыне и вдруг навстречу ему

— лев! Музыкант вспомний, что музыка якобы действуена диких зверей успокавизающе и заиграл, на скрипке. Усте сел и стал слушать. Вскоре присоединился к нему эторой лев, затем третий, четвёртый, пятый и. В друг появился огромный, старый лев. Увидев человека, ои растелкал своих собратьев, книјусле на скрипача и съсле сто.

— Как тебе не стыдно? — заговорили другие львы. — Он так чудесно играл! В ответ старый лев приложил лапу к уху и сказал: —



Слон купается в море. Вдруг к берегу подходит мышка и кричит:

- Эй, ты, толстый! Ну-ка, марш на берег! — А что такое?
- Поговори, поговори у меня!¹⁶) Выходи, да пожи-
- вее [17]

 Слон выходит, совершенно поражённый нахальством



Мышь посмотрела на слона, потом говорит:

- Ладно, вали отсюда¹⁸).
- Слушай, может скажешь, в чём дело?

 Так и быть 19), скажу. Кто-то стянул²⁹) мои купальные трусики, вот я и подумала, что, может быть, ты.

РУССКИЕ ПОСЛОВИЦЫ И ПОГОВОРКИ

Без кота мышам масленица21).

Близ норы лиса на промысел не ходит 22).

Быть собаке битой — найдётся и падка²³).

В мутной воде рыба ловится²⁴). Взиуздать коня с хвоста²⁵).

Видна птица по полету²⁵).

Волк в овечьей шкуре 27).

Волк и каждый год линяет, да обычая не меняет²⁸).

Волков бояться — в лес не холить²⁹).

Ворон ворону глаз не выклюет 30).

Ворон ворону глаз не выклюет³⁰). Вороне соколом не быть³¹).

Вот где собака зарыта 32).

Всяк кулик своё болото хвалит³³).

Дарёному коню в зубы не смотрят³⁴).

Делать из мухи слона³⁵).

Делить шкуру неубитого медведя³⁶).

За двумя зайцами погонишься, ни одного не поймаешь ^{3 7}).

Заморить червячка 38).

Золотая клетка соловья не красит39).

И волки сыты, и овны нелы+0).

Когла рак свистнет41).

Кошке смех, мышке слёзы 42).

Лить крокодиловы слёзы43). Лучше синица в руках, чем журавль в небе 44).

Метать бисер перед свиньями45).

На безрыбье и рак рыба46).

Не бойся той собаки, которая лает 47). Ночью все кошки серы48).

Одна ласточка весны не делает49).

По когтям узнают льва50).

Покупать кота в мешке 51).

С медведем дружись, а за топор держись 52), Слово не воробей, вылетит — не поймаещь 53),

Собака лает — ветер носит 54).

Собаку съесть на чём-либо 55).

Цыплят по осени считают ⁵⁶). Чёрного кобеля не отмоещь добела⁵⁷).

Яйца курицу не учат 58).

NOTES

- 1) Lit. The beast in him awoke
- 2) Lit. Cross-pawed.
- 3) Lit. Fat as a cow. 4) Always used in the sense to be spoiling for a fight.
- 5) To boast.
- 6) To be drunk, stupefied,

- 7) Lit. To lie like a grey gelding. Why a grey gelding lies is something nobody knows. The English equivalent is to lie like a trooper
- 8) To play cat-and-mouse,
- 9) Meaning to be a drunkard.
- 10) Used to describe a very sly person,
- 11) Lit. If you live among wolves, you must how! like one.
- 12) Meaning an extremely unpleasant, opaque stare,
- 13) The same sense as to beat one's head against a wall,
- 14) To call someone a good goose actually means something like wise guy. Smart Alec.
- 15) Meaning What?
- 16) Watch your tongue! 17) Make it snappy!
- 18) Beat it! (very collog.).
- 191 Very condescending.
- 20) Swiped.
- We give here the literal translation and, when necessary, the meaning of each proverb, hoping that our readers will find it interesting to supply the English conivalent.
- 213 When the cat's away, it's a mouse holiday, 22) The fox never hunts near its own den
- 25) If the dog has to be beaten, a stick will always be found.
- 24) Fish are caught easily in muddy waters.
- 25) To saddle the horse from the tail (meaning, to do something the wrong way).
- 26) Recognise the bird by its flight,
- 273 A wolf in a sheep's skin. 289 The wolf sheds its fur yearly, but changes not its habits.
- 29) If you fear wolves, don't enter the forest.
- 30) One crow will never blind another.
- 313 A crow can never be a falcon

- 32) That's where the dog is buried (meaning, that is the reason).
- 33) Any snipe praises its own swamp.
- 34) Don't look a gift-horse in the mouth.
- 35) To make an elephant out of a fly (meaning, to make a mountain out of a molehill).
- 36) To divide the skin of a living bear (meaning, to discuss the results of something not yet done).
- 37) Chase two hares, you'll not eatch one.
- 383 To kill the worm (meaning, to satisfy one's appetite).
- 39) A golden cage does not make the nightingale more beautiful.
 40) The wolves are full and the sheep are safe (to find a solution that satisfies
- all concerned).

 41) When the shrimp whistles.
- 42) Cat's laughter mouse's tears.
- 43) To shed crocodile tears.
- 44) Better a bluebird in hand than a crane in the sky.
- 45) To cast pearls before swine.
- 46) In fishless times even a crab is a fish.
- 47) Fear not the barking dog.
- 48) At night all cats are grey.
- 49) One swallow does not mean spring. 501 Know the lion by its claws.
- 511 To buy a cat in a bag (to buy something without seeing it).
- 52) Be friends with a bear, but keep an axe handy.
- 53) A word is not like a sparrow once it has flown out, it cannot be caught.
 54) Dog barks, wind carries (meaning, there is little harm in angry words).
- 54) Dog barks, wind carries (meaning, there is note norm in angly words).
 55) To eat a dog on something (to be a great specialist on a given subject).
- 561 Count your chicks in autumn (meaning, do not make rash forecasts).
- 57) You'll never wash a black dog white. 58) The egg should not preach to the hen.

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